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**TEST REPORT**

**China Harbour – China State Joint Venture**

**CONTRACT NO. CV/2009/02**

**HANDLING OF SURPLUS PUBLIC FILL**

**TSEUNG KWAN O AREA 137 FILL BANK**

**MONTHLY EM&A REPORT NO.26**

**(JANUARY 2012)**

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By E-mail and Fax No.: 2695 3944

ETS-Testconsult Limited  
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Attention: Mr. C. L. Lau

Dear Mr. Lau,

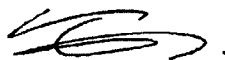
**Re: Contract No. CV/2009/02  
Handling of Surplus Public Fill – Tseung Kwan O Area 137 Fill Bank  
Monthly EM&A Report No. 26 for January 2012**

Reference is made to your submission of the draft Monthly EM&A Report for January 2012 for the captioned by E-mail on 8 February 2012.

We are pleased to inform you that we have no comment on the captioned report.

Thank you very much for your attention and please do not hesitate to contact our Simon Lam or the undersigned should you have any queries.

Yours faithfully,



Tony Cheng  
Independent Environmental Checker

c.c. CEDD  
CHCSJV

Attn: Mr. Thomas Wong  
Attn: Mr. Dennis Tang

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## **EXECUTIVE SUMMARY**

This monthly Environmental Monitoring and Audit (EM&A) report No.26 was prepared by ETS-Testconsult Ltd (ET) for the "Contract No: CV/2009/02 – Handling of Surplus Public Fill – Tseung Kwan O Area 137 Fill Bank" (The Project).

This report documented the findings of EM&A Works conducted during the operation phase of Fill Bank at Tseung Kwan O Area 137 in January 2012.

### **Site Activities**

As informed by the Contractor, the site activities in this reporting month were as below:

- Removal & delivery of public fill stockpiled material to Mainland
- Operation of the road water lorries and the road sweeper
- Maintenance of haul road within fill bank area
- Delivery of public fill received at the Chai Wan Public Fill Barging Point to TKO fill bank
- Operation of the tipping hall (A1, A2 & A3)
- Operation at the queuing area for public truck lorries
- Operation of stone crushing plant at TKOFB

### **Environmental Monitoring Progress**

The summary of the monitoring activities in this monitoring month is listed below:

- Noise Monitoring (Day-time): 1 Occasion at 1 designated location
- 24-hour TSP Monitoring: 6 Occasions at 2 designated locations
- 1-hour TSP Monitoring: 15 Occasions at 2 designated locations
- Marine Water Quality Monitoring: 10 Occasions at 2 designated locations
- Weekly-site inspection: 5 Occasions

### **Noise Monitoring**

No exceedances of Action and Limit levels for noise monitoring were recorded in the reporting month.

### **Air Monitoring**

Since the old CREO was closed, dust monitoring station TKO-A2 located at old Combined Reception and Exit Office (CREO) was relocated to the new dust monitoring station TKO-A2a at the new CREO under the proposal by ET, approval by the ER and agreement by IC(E) and effective on 01 February 2011.

No exceedances of Action and Limit levels were recorded for 1-hr and 24-hr TSP monitoring in the reporting month.

### **Marine Water Quality Monitoring**

No exceedances of Action and Limit levels were recorded for water quality monitoring in the reporting month.

### **Site Inspection**

Environmental site inspections conducted in this reporting month are presented as follows:

<u>Concerned Parties</u>	<u>Dates of Audit / Inspection</u>
ET Weekly site inspection	04, 11, 18, 27 and 31 January 2012
IEC site inspection	04 and 18 January 2012

In general, performance on environmental mitigation measures implemented was found to be satisfactory in this reporting month. The major findings observed during site inspections are presented in the Section 7.0.

### **Landscape and Visual**

The germination rate on the panels was satisfactory in this reporting month. The Contractor should properly maintain the hydroseeded panels.

### **Environmental Complaints, Notification of summons and successful prosecutions**

No complaints and no notification of summons or successful prosecutions with respect to environmental issues were received in this reporting month.



### **Future Key Issues**

Based on the site inspections and forecast of engineering works in the coming month, key issues to be considered are as follows:

- *Noise and air quality impact due to site works;*
- *Maintain wheel washing facilities properly;*
- *Maintain all drainage and desilting facilities properly;*
- *Use and maintain silt curtain properly;*
- *Clean up the fill material on concrete pavement along the BHA frequently;*
- *Watering, hydroseeding or covering all opening slopes and stockpiles with tarpaulin to avoid wind and water erosion;*
- *Sufficient drip trays for all oil drums / chemical containers;*
- *Implement all necessary preventive measures to avoid oil leakage. In the event an oil leakage happens, the Contractor should properly remove the leaked oil and handle the contaminated soil and all materials using for this cleaning works as chemical waste;*
- *Maintain good site practice and waste management to minimize environmental impacts at the site; and*
- *Follow-up improvements on waste management issues.*

## 1.0 INTRODUCTION

China Harbour – China State Joint Venture (CHCSJV) appointed Environmental Team (ET) of ETS-Testconsult Limited (ETL) to undertake the Environmental Monitoring and Audit (EM&A) for the “Contract No: CV/2009/02 –Handling of Surplus Public Fill – Tseung Kwan O Area 137 Fill Bank” (The Project).

In accordance with the Environmental Permit (No.: EP-134/2002/J) (the EP), an EM&A programme should be implemented in accordance with the procedures and requirements in the EM&A Manual of the approved EIA report (Registration No. AEIAR-060/2002). The EM&A programme for this study as stated in Section 2.3.1 of the EM&A Manual covers the following environmental aspects during the establishment, operation and removal phases of the Fill Bank at Tseung Kwan O Area 137:

- *Fugitive Dust;*
- *Noise generation from onsite activities;*
- *Water Quality; and*
- *Landscape and Visual.*

The EM&A programme requires environmental monitoring for air quality, noise and water quality and environmental site inspections for air quality, noise, water quality, landscape and visual, and waste management. The EM&A requirements for each parameter described in the following sections include:

- *All monitoring parameters;*
- *Monitoring schedules for the reporting month and forthcoming months;*
- *Action and Limit levels for all environmental parameters;*
- *Event/Action Plans;*
- *Environmental mitigation measures, as recommended in the Project EIA study final report; and*
- *Environmental requirements in contract documents.*

Baseline monitoring was completed in August and September 2002 by Materialab. Action and Limit Levels were established for air and water quality parameters based on the baseline monitoring results.

This report documented the findings of EM&A Works conducted during the operation phase of Fill Bank at Tseung Kwan O Area 137 in January 2012.

## 2.0 PROJECT INFORMATION

### 2.1 Scope of the Project

The scale and scope of the Project as stated in the EP include:

- Site clearance;
- Construction of a temporary storm water system;
- Stockpiling of 6 million m<sup>3</sup> of public fill;
- Setting up two barging points: one at the Tseung Kwan O Basin (TKO Basin) and one at the Construction and Demolition Material Sorting Facility (C&DMSF) for transporting the stockpiled public fill by barges;
- Setting up a temporary barging point at the existing Explosive Off-loading Barging Point located in the south-eastern part of Area 137 for the period of May 2004 to December 2004 for transporting the stockpiled public fill by barge;
- Construction and operation of a Construction and Demolition Material Sorting Facility (C&DMSF);
- Setting up a Construction and Demolition Material Crushing Facility at the TKO Basin; and
- Remove the temporary fill bank.

## 2.2 Site Description

Tseung Kwan O Area 137 is located at the southern end of Wan Po Road. In the vicinity of the site are other industrial uses such as SENT landfill, TKO Industrial Estate, etc. Both Island Resort and Fullview Garden are also situated at more than 1.8km from the site. Other existing ASRs and NSRs, including resident developments and schools, are located at a further distance away from TKO Area 137.

## 2.3 Work Programme

Details of work programme are shown in Appendix G.

## 2.4 Project Organization and Management Structure

The organization chart and lines of communication with respect to the on-site environmental management and monitoring program are shown in Appendix A.

## 2.5 Contact Details of Key Personnel

The key personnel contact names and telephone numbers are shown in Table 2.1.

Table 2.1 Contact Details of Key Personnel

Organization	Name of Key Staff	Project Role	Tel. No.	Fax No.
CEDD	Mr. Lawrence NG Mr. CHU Tun Hon Mr. Wong Wa Kei Mr. LIU Chi Yuen	Engineer's Representative	2760 5835	2714 0113
IEC (Materialab) *	Mr Joseph Poon	IEC	2450 8238	2450 6138
IEC (Environ) *	Mr Tony Cheng	IEC	3743 0722	3548 6988
Contractor (CHCSJV)	Mr. Wah Fung Lok	Contractor's Agent	9772 7055	2243 4089
ET (ETL)	Mr C. L. Lau	ET Leader	2946 7791	2695 3944

Remark (\*): Materialab was being as IEC of this Project until 31 January 2010 and was replaced by Environ from 01 February 2010.

## 3.0 WORK PROGRESS IN THIS REPORTING MONTH

As informed by the Contractor, the activities in the reporting month include:

- Removal & delivery of public fill stockpiled material to Mainland
- Operation of the road water lorries and the road sweeper
- Maintenance of haul road within fill bank area
- Delivery of public fill received at the Chai Wan Public Fill Barging Point to TKO fill bank
- Operation of the tipping hall (A1, A2 & A3)
- Operation at the queuing area for public truck lorries
- Operation of stone crushing plant at TKOFB

## 4.0 AIR QUALITY MONITORING

### 4.1 Monitoring Requirement

TSP levels were monitored in the reporting month in accordance with the EM&A Manual. Table 4.4 shows the Action and Limit Levels for the environmental monitoring works.

### 4.2 Monitoring Equipment

Both 1-hour and 24-hour TSP air quality monitoring was performed using a GMWS2310 High Volume Air Sampler (HVS) located at each of the designated monitoring station. Table 4.1 summarizes the equipment used in the air quality monitoring programme. A copy of the calibration certificates for the HVS and calibrator are attached in Appendix B1.



Table 4.1 Air Quality Monitoring Equipment

Equipment	Model and Make
HVS	Greasby GMWS2310
Calibrator	Tisch TE-5025A
Wind Data Logger	Davis Weather Monitor II

#### 4.3 Monitoring Parameters, Frequency and Duration

Table 4.2 summarizes the monitoring parameters, monitoring duration and frequencies of air quality monitoring.

Table 4.2 Monitoring parameters, duration, frequency of air quality monitoring

Parameter	Duration	Frequency
24-hr TSP	24 hr	Once every six days
1-hr TSP	1 hr	Three times per day every six days

#### 4.4 Monitoring Locations

Since the old CREO was closed, dust monitoring station TKO-A2 located at old Combined Reception and Exit Office (CREO) was relocated to the new dust monitoring station TKO-A2a at the new CREO under the proposal by ET, approval by the ER and agreement by IC(E) and effective on 01 February 2011.

Table 4.3 tabulates the air quality monitoring locations of this project.

Table 4.3 Air quality monitoring locations

Monitoring station	Location
TKO-A1	Site Egress
TKO-A2a	New CREO

#### 4.5 Monitoring Methodology

##### **Both 1-hr and 24-hr air quality monitoring (High Volume Sampler)**

##### Instrumentation

High volume sampler, as HVS, (Greasby GMWS2310) complete with appropriate sampling inlets were employed for both 1-hour and 24-hour TSP monitoring. The sampler is composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complies with that required by USEPA standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).

##### Installation

The installation of HVS refers to the requirement stated in EM&A Manual.

##### Operation/Analytical Procedures

Operating/analytical procedures for the operation of HVS are as below:

- Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 0.6m<sup>3</sup>/min and 1.7m<sup>3</sup>/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50. The flow rate was indicated on the flow rate chart.
- For TSP sampling, fiberglass filters (GA-55) were used.
- The power supply was checked to ensure the sampler worked properly.
- On sampling, the sampler was operated 5 minutes to establish thermal equilibrium before placing any filter media at designated air monitoring station.
- The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centered with the stamped number upwards, on a supporting screen.
- The filter was aligned on the screen so that the gasket formed an air-tight seal on the outer edges of the filter. Then the filter holder frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.

- The programmable timer will be set for a sampling period of 1 hour or 24 hours. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number.).
- After sampling, the filter was transferred from the filter holder of the HVS to a sealed plastic bag and sent to the laboratory for weighting. The elapsed time was also recorded.
- Before weighting, all filters were equilibrated in a desiccator for 24 hour with the temperature of  $25^{\circ}\text{C} \pm 3^{\circ}\text{C}$  and the relative humidity (RH)  $<50\% \pm 5\%$ .
- All measurement procedures in Section 2.3 of the EM&A Manual were followed during the reporting month.

#### Maintenance & Calibration

- HVS and their accessories should be maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
- HVS should be calibrated at bi-monthly intervals.

#### **Wind Data Monitoring**

##### Measuring Procedure

Upon installation of the wind data logger on site, temperature, wind speed and direction was automatically stored in the logger. Regular downloading of the information was carried out weekly.

##### Maintenance

Cleaning was provided for all the rotational parts of the wind data logger regularly. Replacement of battery was carried out weekly. The wind data logger was checked once per week and no calibration was required for the equipment as instructed by the manufacturer.

#### **4.6 Action and Limit Levels**

Table 4.4 shows the Action and Limit levels for 24-hr TSP and 1-hr TSP monitoring.

Table 4.4 Action and Limit Levels for 24-hr TSP and 1-hr TSP

Monitoring Location	24-hr TSP ( $\mu\text{g}/\text{m}^3$ )		1-hr TSP ( $\mu\text{g}/\text{m}^3$ )	
	Action Level	Limit Level	Action Level	Limit Level
TKO-A1	210	260	376	500
TKO-A2 & TKO-A2a *	210	260	376	500

Remark (\*): Since dust monitoring stations TKO-A2 and TKO-A2a are located close to the major dust emission sources and also close to the same sensitive receptor and no significant difference between them on the prevailing meteorological conditions, the baseline data from TKO-A2 can also be valid in the case of TKO-A2a.

#### **4.7 Event-Action Plans**

Please refer to Appendix F for details.

#### **4.8 Results and Observation**

##### **4.8.1 1-hour and 24-hour TSP Monitoring results**

Monitoring data of both 1-hour and 24-hour TSP monitoring carried out in this reporting month are summarized in Appendix B2. Graphical presentation of 1-hour and 24-hour TSP monitoring results for the reporting month is shown in Appendix B3. Wind data included wind speed and wind direction was extracted from Tseung Kwan O Station of Hong Kong Observatory during this reporting month and is presented in Appendix E. Table 4.5 summarizes 1-hr TSP and 24-hr TSP monitoring results.



**Table 4.5 Summary of 1-hr TSP and 24-hr TSP Monitoring Results**

Air quality monitoring Stations	Location	Monitoring Period						
		24-hr TSP			1-hr TSP			
		Date	Result ( $\mu\text{g}/\text{m}^3$ )	Exceedance #	Date	Start Time	Result ( $\mu\text{g}/\text{m}^3$ )	Exceedance #
TKO-A1	Site Egress	01/01/12	126	X	04/01/12	09:45	300	X
					04/01/12	13:00	335	X
					06/01/12	14:00	340	X
		07/01/12	136	X	09/01/12	13:00	319	X
					09/01/12	14:05	302	X
					11/01/12	09:40	284	X
		13/01/12	139	X	13/01/12	14:00	294	X
					16/01/12	13:00	305	X
					18/01/12	09:40	286	X
		19/01/12	149	X	20/01/12	11:35	330	X
					20/01/12	14:00	340	X
					21/01/12	09:00	303	X
		26/01/12	155	X	27/01/12	13:00	316	X
					27/01/12	15:40	299	X
					30/01/12	09:00	310	X
31/01/12	148	X	---	---	---	---		
			---	---	---	---		
			---	---	---	---		
TKO-A2a	New CREO	01/01/12	111	X	04/01/12	09:40	304	X
					04/01/12	13:10	346	X
					06/01/12	13:50	332	X
		07/01/12	113	X	09/01/12	13:10	291	X
					09/01/12	14:15	270	X
					11/01/12	09:45	244	X
		13/01/12	116	X	13/01/12	14:10	260	X
					16/01/12	13:10	286	X
					18/01/12	09:45	270	X
		19/01/12	129	X	20/01/12	11:30	347	X
					20/01/12	14:05	352	X
					21/01/12	09:00	278	X
		26/01/12	131	X	27/01/12	13:05	291	X
					27/01/12	15:45	271	X
					30/01/12	09:05	291	X
31/01/12	127	X	---	---	---	---		
			---	---	---	---		
			---	---	---	---		

Remark (\*): L=Limit Level exceedance, A=Action Level exceedance and X=not an exceedance

No exceedance of Action and Limit Level of 1-hr TSP and 24-hour TSP monitoring results was recorded during the reporting month.

#### 4.8.2 Observation

Generally, the Contractor implemented sufficient dust mitigation measures, including operation of the mist spraying systems at the CEDD Combined Reception Office and the site egress area, wheel washing facilities, road dampening by water bowsers and automatic water sprinklers on the main haul roads. Furthermore, hydroseeded slopes on the stockpiling areas was maintained properly in order to prevent dust generation from wind erosion of the exposed surfaces. Other dust sources near TKO Area 137 also included operation of the C&DMSF at the PBR2 Project site, the temporary C&DMSF at Portion K and dumping activities at the SENT Landfill.

## 5.0 Noise Monitoring

### 5.1 Monitoring Requirements

Noise monitoring was conducted at 1 monitoring station as specified in the approved EM&A Monitoring Proposal for good site practice. The equipment, parameter, frequency, duration, methodology, calibration details, results and observations of the noise monitoring for the reporting month are presented in this section.

### 5.2 Monitoring Equipment

An Integrating Sound Level Meter was used for noise monitoring. It was a Type 1 sound level meter capable of giving a continuous readout of the noise level reading including equivalent continuous sound pressure level ( $L_{eq}$ ) and percentile sound pressure level ( $L_x$ ). It complies with International Electro Technical Commission Publications 651:1979 (Type1) and 804:1985 (Type1), and speed in m/s was used to monitor the wind speed.

Table 5.1 summarizes noise monitoring equipment model being used. A copy of the calibration certificate for noise meter and calibrator are attached in Appendix C1.

Table 5.1 Noise Monitoring Equipment

<i>Equipment</i>	<i>Model</i>
<i>Integrating Sound Level Meter</i>	<i>Rion NL-31 Sound Level Meter</i>
<i>Calibrator</i>	<i>Castle GA607 Acoustic Calibrator</i>
<i>Portable Wind Speed Indicator</i>	<i>TSI Model 8340-M Air Velocity Meter</i>

### 5.3 Monitoring Parameters, Duration and Frequency

Duration, frequencies and parameters of noise measurement are presented in Table 5.2.

Table 5.2 Duration, Frequencies and Parameters of Noise Monitoring

<i>Time period</i>	<i>Duration/min</i>	<i>Parameters</i>	<i>Frequency</i>
<i>Day-time: 0700-1900 hrs on normal weekday</i>	30	$L_{eq}$ , $L_{10}$ , $L_{90}$	Once per month

### 5.4 Monitoring Locations

One Noise monitoring was conducted at the noise monitoring location, TKO-N1 as shown in Figure 2 during the reporting month. Table 5.3 describes the location of the monitoring station.

Table 5.3 Noise Monitoring Locations

<i>Monitoring station</i>	<i>Location</i>	<i>Type of Measurement</i>
<i>TKO-N1</i>	<i>Outside site Egress along Wan Po Road</i>	<i>Free Field</i>

### 5.5 Monitoring Procedures and Calibration Details

#### Operation/Analysis Procedures

- The Sound Level Meter was set on a tripod at a height of 1.2m above the ground.
- For free field measurement, the meter was positioned away from any nearby reflective surfaces.
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
  - Frequency weighting: A
  - Time weighting : Fast
  - Time measurement : 30 mins
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94 dB at 1000HZ. If the difference in the calibration level before and after measurement was more than 1dB(A), the measurement would be considered invalid and repeat measurement would be required after re-calibration or repair of the equipment.
- The wind speed was frequently checked with a portable wind meter.

- During the monitoring period, the Leq, L10 and L90 were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Correction factor of +3dB(A) should be made to the free Field measurements.
- Noise monitoring would be cancelled in the presence of fog, rain, wind with a steady speed exceeding 5m/s, or wind gusts exceeding 10m/s.

#### Maintenance and Calibration

- The microphone head of the sound level meter and calibrator are cleaned with soft cloth in quarterly intervals.
- The meter is sent to the supplier or HOKLAS laboratory to check and calibrated in yearly intervals.

### 5.6 Action and Limit Levels

The Action and Limit levels for noise levels derived as illustrated in Table 5.4.

Table 5.4 Action and Limit Levels for noise monitoring

Time Period	Time Period	Action	Limit
Normal hours	0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A)

### 5.7 Event-Action Plans

Please refer to the Appendix F for details.

### 5.8 Results and Observation

#### 5.8.1 Results

Only Day-time noise monitoring was carried out at monitoring station TKO-N1 in this reporting month. The detail of the noise monitoring is provided in Appendix C2. Graphical presentation of the monitoring result for the reporting month is shown in Appendix C3. A summary of the monitoring result is presented in Table 5.5.

Table 5.5 Summary of Impact Noise Level

Date	Start Sampling Time (hh:mm)	Noise Level dB (A) *		
		$L_{eq(30min)}$	$L_{10}$	$L_{90}$
11/01/12	09:40	68.9	70.4	64.4

Remark: (\*) : Correction factor of +3dB(A) was added to the measured results due to the free Field measurements.

Since no documented complaints on noise issue were received in this reporting month, no Action Level exceedances were recorded. Besides, no exceedances in Limit Level were recorded according to the result from Day-time noise monitoring.

#### 5.8.2 Observation

The major noise source during the monitoring event was the dump truck traffic. Operation of the Fill Bank was from 08:00 to 21:00 from Monday to Sunday in the reporting month. Whereas the operation hours for barge activities in the TKO Basin was from 08:00 to 23:00. The monitoring result complied with the noise limit of 75dB(A).

### 6.0 MARINE WATER QUALITY MONITORING

#### 6.1 Monitoring Requirements

In accordance with the EM&A Manual, impact marine water quality monitoring was conducted three days per week. Measurements were taken at both mid-flood and mid-ebb tides at three depths (i.e. 1m below surface, mid depth and 1m from seabed) at Control Station, C1 and Monitoring Station, M4.

## 6.2 Monitoring Locations

For the Reclamation Project, there were 4 Designated Monitoring Stations and 2 Designated Control Stations specified in the EM&A Manual. Upon the completion of the monitoring programme under Stage 2 reclamation works, the ET started monitoring events at the impact station M4 and the control station C1 from 18 May 2004 onwards. Figure 1 shows the location of the marine water quality monitoring stations. Table 6.1 describes the locations of the monitoring stations in the reporting month.

Table 6.1 Locations of Marine Water Monitoring Stations

Station Description	Code	HK Metric Grid E	HK Metric Grid N
Control Station (Ebb tide)	TKO-C1	844 740.208	815 371.502
Monitoring Station, Tung Lung Chau Fish Culture Zone	TKO-M4	847 741.029	812 977.878

## 6.3 Monitoring Parameters

Monitoring of the marine water quality parameters are listed in Table 6.2.

Table 6.2 Marine Water Quality Monitoring Parameters

In-situ measurement	Laboratory analysis
Depth (m)	Suspended solids (mg/L)
Temperature (°C)	
Dissolved Oxygen (mg/L and % saturation)	
Turbidity (NTU)	
Salinity (ppt)	

## 6.4 Monitoring Frequency

The monitoring frequency of the marine water monitoring is summarized in Table 6.3.

Table 6.3 Monitoring frequency of the marine water

Parameter	Frequency	No. of Location	No. of Depths
Temperature	3 days/week, 2 tides/day	2 (TKO-C1 and TKO-M4)	3 (Surface, mid-depth & bottom)
Salinity			
DO			
Turbidity			
Suspended solids			

## 6.5 Monitoring Methodology and Equipment Used

### For Location of the monitoring stations

#### **Global Positioning System (GPS)**

A hand-held digital GPS was used to identify the designated monitoring stations prior to water sampling.

### For Water Depth measurement

#### **Echo Sounder**

A portable, battery-operated echo sounder was used for the determination of water depth at each designated monitoring station.

### For In-situ Water Quality Measurement

All in-situ monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals or sometimes longer throughout all stages of the water quality monitoring.



**Dissolved Oxygen, Salinity and Temperature Measuring Equipment**

A portable, weatherproof dissolved oxygen & salinity measuring instrument, which complete with cable, sensor and DC power source (e.g. YSI 85 or equivalent) was used for measuring:

- a dissolved oxygen level in the range of 0-20 mg/L and 0-200 % saturation;
- a salinity in range 0-40 ppt; and
- a temperature of 0-45 degree Celsius

A membrane electrode with automatic temperature compensation complete with a cable was installed.

**Turbidity Measurement Instrument**

A portable and weatherproof turbidity meter (HACH model 2100P) was used during impact monitoring. It has a photoelectric sensor capable of measuring turbidity between 0-1000 NTU. Response of the sensor was checked with certified standard Turbidity solutions before the start of measurement.

**For Water Sampling and Sample Analysis**

In-situ monitoring was carried out at three depths: 1 meter below water surface, at mid-depth and 1 meter above the seabed. If the water depth is less than 6 m, the mid-depth station shall be omitted and if the water depth is below 3 m, only the mid depth station shall be monitored.

**Water Sampler**

A water sampler comprising a transparent PVC cylinder, with a capacity of not less than 2 liters, was lowered into the water body at the predetermined depth. The both opening ends of the sampler were then closed accordingly by dead weight and water samples were collected.

**Water Container**

The sample container, made by high-density polythene, was rinsed with a portion of the water sample. The water sample was then transferred to the container, labelled with a unique sample ID and sealed with a screw cap. The water samples were stored in a cool box maintained at 4°C. The water samples were then delivered to a local HOKLAS-accredited laboratory (Environmental Laboratory, ETS-Testconsult Ltd, HOKLAS Registration No. 022) on the same day for analysis.

The summary of testing method of testing parameter as recommended by EIA or required by EPD, with the QA/QC results in accordance with the requirement of HOKLAS or international accredited scheme is shown in Table 6.4.

Table 6.4 Summary of testing procedures

Laboratory Analysis	Testing Procedure	Detection Limit
Total suspended solids	In house method based on APHA 19 <sup>th</sup> ed 2540D	1.0 mg/L

**In-situ measurement**

All in-situ monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme before use. Responses of sensors and electrodes were checked with certified standard solutions before each use. Wet bulb calibration for a DO meter was carried out before the start of measurement.

At each measurement/sampling depth, two consecutive measurements of dissolved oxygen (DO), dissolved oxygen saturation (DOS), turbidity and salinity were taken. For turbidity measurement, the sample was collected by using sampler and then transferred to the cell. The reading of turbidity of the sample was directly recorded from the Turbidimeter (HACH 2100P) after inserting the cell to the Turbidimeter. For DO, DOS and Salinity, duplicate measurements were performed by dropping the calibrated probes of the corresponding monitoring equipments to the designated depths of the water column and taking readings after stabilized. The duplicate measurements were averaged if the difference was not greater than 25%. If the difference is greater than 25%, repeat measurement will be required.

Table 6.5 shows the equipment used for in-situ monitoring of water quality. The calibration certificates are attached in Appendix D1.

Table 6.5 Details of Marine Water Quality Monitoring Equipment (In-site measurement)

Parameter	Model	Date of Calibration	Due Date	Equipment No.
Coordinate of Monitoring stations	MLR GPS Navigator, SP24	----	----	ET/EW/005/01*
Dissolved Oxygen (Saturation), Temperature, Salinity	YSI Dissolved Oxygen, Salinity & Temperature Meter, YSI 85	14/11/11	13/02/12	ET/EW/008/002*
Turbidity	HACH Model 2100P Turbid Meter	13/10/11 13/01/12	12/01/12 12/04/12	ET/0505/007
Water Depth	EAGLE Strata 128 Sonar	----	----	EW/002/02

Remark: (\*) indicates the instrument should be calibrated on use.

## 6.6 Action and Limit Level

The water quality criteria, namely Action and Limit (A/L) levels are presented in the table below.

Table 6.6 Water Quality Action and Limit Levels

Parameter	Action Level	Limit Level
DO (mg/L)	<u>Surface &amp; Middle</u> <5.45 mg/L (5%-ile of baseline data) <u>Bottom</u> <4.72 mg/L (5%-ile of baseline data)	<u>Surface &amp; Middle</u> <5.10 mg/L (1%-ile of baseline data) <u>Bottom</u> <2.00 mg/L
SS (mg/L) (Depth-averaged)	>6.74 mg/L (95%-ile of baseline data) or >120% of the upstream control station's SS at the same tide on the same day	>7.67 mg/L (99%-ile of baseline data) or >130% of the upstream control station's SS at the same tide on the same day
Turbidity (NTU) (Depth-averaged)	>4.28 NTU (95%-ile of Impact data) or >120% of the upstream control station's turbidity at the same tide on the same day	>4.58 NTU (99%-ile of Impact data) or >130% of the upstream control station's turbidity at the same tide on the same day

## 6.7 Event and Action Plan

Please refer to the Appendix F for details.

## 6.8 Monitoring Duration and Period in this reporting month

Below is the time schedule for the marine water quality monitoring events that were conducted in this reporting month:

Table 6.7 Time Schedule of Impact Marine Water Quality Monitoring

January 2012						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Remarks: (▼) = Marine water quality monitoring carried out by ET.

The daily marine water quality monitoring duration are detailed in Appendix D2.



## 6.9 Marine Water Quality Monitoring Results

The impact water quality measurement results are detailed in Appendix D2. Appendix D3 presents the water quality monitoring data and graphical presentations of monitoring results respectively.

The summary of marine water quality exceedances is shown in Table 6.8.

Table 6.8 Summary of Impact Marine Water Quality Exceedances in this reporting month

Station	Exceedance Level	DO		Turbidity		SS		Total	
		Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb
TKO-C1	Action	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0
TKO-M4	Action	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0

No exceedances for water monitoring were recorded in this reporting month.

## 7.0 IEC SITE AUDIT AND WEEKLY ET SITE INSPECTIONS

### 7.1 IEC Site Audit

7.1.1 During this reporting period, the IEC team conducted two independent site audits of the Contract CV/2009/02 site (TKO Area 137 Fill Bank).

7.1.2 Findings of the site audit have been recorded on site checklists, copies of which were submitted to the Contractor for their further action as appropriate, and to the Client for their records. Key issues were highlighted to the Contractor's representative at the completion of each site audit to ensure that they were aware of the problem(s) identified and where necessary, to take immediate corrective actions. A copy of the completed checklists are appended to this report in Appendix H.

Table 7.1 Dates of IEC Site Audits in this reporting month

Date of Audit	Work Period	Site Audit Checklist Submitted Under IEC's Ref No.
04 January 2012	Operation of TKO Area 137 Fill Bank	CEDPFRSFEM00_120104_TKOFB
18 January 2012		CEDPFRSFEM00_120118_TKOFB

7.1.3 The major findings recorded during the site audit conducted during this reporting period are summarized below. Full details are provided in the site audit checklists presented in Appendix H.

Table 7.2 Key Findings of IEC Site Audits in this reporting month

Date	Key Findings	Action(s) Taken recommended by IEC	Action(s) Taken by the Contractor during the site audit	Rectification Status by IEC
04 January 2012	Enclosure of Tipping Hall No.3 was found damaged. (Previous item)	The Contractor should repair the damaged part of the Tipping Hall.	---	Follow-up
	Enclosure of Tipping Hall No.2 was found damaged. (Previous item)	The Contractor should repair the damaged part of the Tipping Hall.	---	Follow-up
	Oil was leaked from drip tray at water filling station No.2. (Previous item)	The Contractor should replace the drip tray and properly clean up the oil stain.	Drip tray was replaced and oil stain was removed.	Closed
	No Environmental Permit was displayed at site entrance / exit. (New item)	The Contractor should display the updated EP for public information.	---	Follow-up
	Silt curtain near Tipping Hall No.1 was not provided. (New item)	The Contractor should provide silt curtain as soon as possible.	---	Follow-up

<b>Date</b>	<b>Key Findings</b>	<b>Action(s) Taken recommended by IEC</b>	<b>Action(s) Taken by the Contractor during the site audit</b>	<b>Rectification Status by IEC</b>
18 January 2012	Enclosure of Tipping Hall No.3 was found damaged. (Previous item)	The Contractor should repair the damaged part of the Tipping Hall.	---	Follow-up
	Enclosure of Tipping Hall No.2 was found damaged. (Previous item)	The Contractor should repair the damaged part of the Tipping Hall.	---	Follow-up
	No Environmental Permit was displayed at site entrance / exit. (Previous item)	The Contractor should display the updated EP for public information.	A copy of EP had been displayed at site exit for public information	Closed
	Silt curtain near Tipping Hall No.1 was not provided. (Previous item)	The Contractor should provide silt curtain as soon as possible.	---	Follow-up
	Oil was leaked from Generator and found accumulated in drip tray. (New item)	The Contractor should replace the generator immediately and remove oil from the drip tray.	---	Follow-up

## 7.2 Weekly ET Site Inspections

Weekly ET site inspections were carried out by ET to monitor the timely implementation of proper environmental pollution control and mitigation measures for the Project. In this reporting month, five weekly site inspections were conducted (04, 11, 18, 27 and 31 January 2012).

After each site inspection, a site inspection report detailing the environmental observations had also been prepared by the ET and submitted to RE, IEC and Contractor to notify of the ET's observations and recommendations. The weekly site inspection reports in this reporting month are attached in Appendix I. Summaries of the weekly site inspection findings in this month are described as follows:

### Air Quality

- The major dust sources were dump truck movement on the unpaved haul roads and loading & unloading activities on various working platforms in the Fill Bank. The Contractor deployed water bowsers to dampen the haul roads and the working platforms;
- Watering the site was noted effective and hence no fugitive dust emission was observed in this reporting month. However, the Contractor was still reminded to wet the unpaved haul roads regularly in order to prevent fugitive dust emission especially during dry weather;
- Follow up action to the outstanding finding in the previous month, the enclosure of Tipping Hall No.2 and 3 was found repaired during the weekly sit inspection on 27 and 31 January 2012 respectively;
- Water spraying system at Tipping Hall operated properly during the weekly site inspection in this reporting month. However, the Contractor was still reminded to maintain the water spraying system properly in order to avoid dust generation during operation;
- Black smoke emission was observed from an excavator at dry public fill dumping zone at A4 during the weekly site inspection on 31 January 2012. The Contractor was reminded to stop to use the defect machine until repaired properly and also reminded to maintain all PME regularly and properly in order to avoid black smoke emission. Since the finding was noted in the last weekly site inspection in this reporting month, it will be verified in the coming month;
- Wheel washing facilities were operating during weekly site inspections. Besides, the Contractor operated several mist spraying systems at the site egress and weighbridge respectively. The truckloads were dampened during inspection of fill material at CEDD Reception Office;
- The dump trucks were operating below the speed limit in the Fill Bank. There were sufficient speed limit signs on site to advise the drivers;
- Stockpiles of construction materials were noted covered in this reporting month. However, the Contractor was reminded to cover the stockpile by using tarpaulin sheet to avoid dust generation;
- The fill material was usually dampened on the barge. Dust impact was minimal from the barge delivery and unloading activity at the BHA; and
- Other than the Fill Bank operation, dust sources also included road paving works of Wan Po Road outside the site egress, operation of PBR2 at Portion J of the Fill Bank, temp C&DMSF at

Portion K, delivery of rock fill material from the SENT Landfill to the EPD's barging point and associated dumping activity, operation of the SENT Landfill, vehicular movement and wind erosion on Wan Po Road.

#### **Noise**

- The major noise source was dump truck traffic in the Fill Bank. Since the nearby NSR were remote from the Fill Bank, the noise impact was minimal. There was no specific observation noted regarding noise issue.

#### **Water Quality**

- Silt curtain near the tipping hall No.1 was found damaged during the several weekly site inspections in this reporting month. The Contractor was reminded to repair and maintain the silt curtain properly. Since the finding was still observed in the last weekly site inspection, it will be verified in the coming month.

#### **Chemical and Waste Management**

- The Contractor provided waste skips to collect general refuse and disposal of them regularly to the SENT Landfill. In this reporting month, no C&D waste was disposed to SENT Landfill and no chemical waste was collected by licensed waste collector;
- The chemical waste was stored in the Chemical Waste Storage Area (CWSA). The Contractor should dispose chemical wastes regularly to avoid over accumulation of chemical waste on site;
- The door of CWSA was found locked properly during weekly site inspections in this month; and
- Oil leakage was noted from a drip tray of a generator near water truck filling station No.2 during the weekly site inspection on 18 January 2012. The Contractor was reminded to clean up the leaked oil and contaminated materials as chemical waste. During the weekly site inspection on 27 January 2012, no oil leakage was noted.

#### **Landscape and Visual**

- Germination rate on the hydroseeded panels were observed to be satisfactory in this reporting month. The Contractor was still advised to maintain the hydroseeded panels properly; and
- Sufficient lighting was provided for the Fill Bank operation in the evening.

#### **Site Practices**

- Sufficient rubbish skips had been provided at site by the Contractor in this reporting month.

### **7.3 Review of Environmental Monitoring Procedures**

The monitoring works conducted by the Environmental Team were inspected regularly. The observations for the monitoring works were recorded and summarized as follows:

#### **Air Quality Monitoring**

- The monitoring team recorded the observations around the monitoring stations within and outside of the site.
- The monitoring team recorded the temperature, air pressure and general weather condition on the monitoring day.

#### **Noise Monitoring**

- The monitoring team recorded the observations around the monitoring station, which might affect the results.
- Major noise sources were identified and recorded.

#### **Water Quality Monitoring**

- The monitoring team recorded the observations around the monitoring stations, which might affect the results.

### **7.4 Assessment of Environmental Monitoring Results**

All monitoring results were audited against the Action and Limit levels and any exceedances would be validated.

No exceedance was recorded in water quality, air quality and noise monitoring in this month.

The monitoring results in this reporting period were comparable with those of baseline period. Detailed discussions were given in Section 4, 5 and 6 of this Report.

## 7.5 Advice on the Solid and Liquid Waste Management Status

The Contractor should provide sufficient preventive measures during equipment maintenance works so as to avoid oil leakage on the ground. In the event of any oil leakage, the Contractor should clean up the polluted soil and handle all the materials used for this cleaning works as chemical waste.

Concrete bunding has erected outside the CEDD combined reception office and near the automatic wheel washing facilities for storing generator sets and oil drums. The drain outlet of all the banded areas should be plugged properly. Besides, pre-cast drip trays were provided for oil drums at several areas, such as workshop and chemical storage area. The Contractor should collect and dispose of any stagnant water accumulated in the concrete bunding and drip trays and handle them as chemical waste.

The Contractor should use suitable containers with proper labels to store chemical wastes in accordance with Code of Practice on the Packaging, Labeling and Storage of Chemical Waste. The Contractor should also advise their workers of the proper procedures in handling the chemical waste. All the trip tickets for chemical waste disposal were properly kept in the site office. No chemical waste disposal was undertaken in the reporting month.

The Contractor was reminded to increase the frequency of inspection and cleaning of the site drainage system, including permanent desilting chambers, desilting facilities, oil interceptor bypass tank, DP3 and DP4 and all the trapezoidal channels. Moreover, the Contractor should apply approved pesticides in the stagnant water ponds.

All the runoff from the parking area should be pumped to the desilting facilities and oil interceptors to remove suspended solids and oil & grease prior to discharge.

## 8.0 Status of Environmental Licensing and Permitting

All permits/licenses valid in this reporting month are summarized in Table 8.1.

Table 8.1 Summary of environmental licensing and permit status

Description	Permit No.	Valid Period		Section
		From	To	
Amended Environmental Permit	EP-134/2002/J	14/11/11	---	<ul style="list-style-type: none"> <li>▪ Site clearance</li> <li>▪ Construction of a temporary storm water system</li> <li>▪ Stockpiling of 6 million m3 of public fill</li> <li>▪ Setting up two barging points for transporting the stockpiled public fill by barges</li> <li>▪ Setting up a temporary barging point at the existing Explosive Off-loading Barging Point for the period of May 2004 to December 2004 for transporting the stockpiled public fill by barge</li> <li>▪ Construction of operation of a construction and Demolition Material Sorting Facility (C&amp;DMSF)</li> <li>▪ Setting up a Construction and Demolition Material Crushing Facility at the TKO Basin</li> <li>▪ Remove the temporary fill bank</li> </ul>
Chemical Waste Producer	5123-839-C3577-02	17/12/09	---	Spent Lubricating Oil, Spent Flammable Liquid, Spent Battery containing Heavy Metals and Surplus Paint
Effluent Discharge License	WT00005777-2010	12/05/10	31/05/15	Wastewater arising from the wheel washing bay, Sedimentation Tank & Desilting Tank
Marine Dumping Permit	EP/MD/12-103	01/01/12	31/03/12	Approval for dumping 3,200,000 tons (approximately equal to 1,777,777 cu.m. bulked quantity) of Public Fill (Reclamation Materials) from Tseung Kwan O Area 137 Fill Bank, Tuen Mun Area 38 Fill Bank, Barging Point at Former Kai Tak Airport and MTR XRL Contracts 803A to D to designated dumping area at Guanghaiwan of Taishan



## 9.0 ENVIRONMENTAL NON-CONFORMANCE

### 9.1 Summary of air quality, noise and marine water quality

No action and limit level exceedance of 1-hour and 24-hr TSP monitoring was recorded in this reporting month.

No day-time noise level measured at the monitoring station exceeded the Action and Limit Level in the reporting month.

No exceedance of Action and Limit Level of water quality monitoring results was recorded during the reporting month.

### 9.2 Summary of Environmental Complaints

No complaint was received in this reporting month.

### 9.3 Summary of Notification of Summons and successful Prosecution

There was no notification of summons and successful prosecution respect to environmental issues registered in this reporting month.

## 10.0 IMPLEMENTATION STATUS

### 10.1 Implementation Status of Environmental Mitigation Measures

An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is presented in Appendix J. Most of the necessary mitigation measures were implemented properly. Any deficiencies were noted in the remarks of the schedule.

### 10.2 Implementation Status of Event and Action Plan

No action and limit level exceedance of 1-hour and 24-hr TSP monitoring was recorded in this reporting month.

Since no documented complaints on noise issue were received in this reporting month, no Action Level exceedance was recorded. Besides, no exceedance in Limit Level were recorded according to the result from Day-time noise monitoring.

No exceedance of Action and Limit Level of water quality monitoring results was recorded during the reporting month.

### 10.3 Implementation Status of Environmental Complaint, Notifications of Summons and Successful Prosecutions Handling

No complaint, notification of summon and successful prosecution was received in this reporting month. A summary of environmental complaints, notifications of summons and successful prosecutions was given in Table 10.1 and further details of the complaint could be found in the Complaint Log (Appendix M).

Table 10.1 Summary of Environmental Complaints and Prosecutions

Complaints logged		Summons served		Successful prosecution received	
January 2012	Cumulative	January 2012	Cumulative	January 2012	Cumulative
0	5	0	0	0	0

## 11.0 CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

Impact monitoring of air quality, noise and water quality were carried out at designated locations in accordance with the EM&A Manual in this reporting month.

According to the summary of air monitoring results, no exceedance of Action and Limit Level of 1-hour and 24-hour TSP monitoring results was recorded during the reporting month

The noise level measured at the monitoring station complied with the Limit Level of 75dB(A). No complaint was received regarding noise issue in this reporting month.

No exceedance of Action and Limit Level of water quality monitoring results was recorded during the reporting month.

According to the ET weekly site inspections and IEC site audits carried out in this reporting month, the Contractor generally implemented sufficient dust mitigation measures, including operation of the mist spraying systems and automatic wheel washing facilities, dampening of haul roads and stockpiling areas.

No complaint, prosecutions and notifications of summons were received in this reporting month.

### **Recommendations**

According to the environmental site inspections performed in the reporting month, the following recommendations were provided:

#### ***Air Quality***

- Ensure the frequency of water spraying on haul roads, unloading areas and stockpiles to be sufficient to suppress the dust sources;
- Provide proper maintenance for the powered mechanical equipment and barges to avoid emission of dark smoke;
- Provide water spraying onto the truckloads during inspection of fill material;
- Conduct road sweeping on all paved haul roads and public roads especially outside and near the site egress by the road sweeper. Undertake water spraying on stockpiling area by water bowsers;
- Erect adequate speed limit signs to advise the truck drivers of the speed limit;
- Operate mist spraying systems and automatic water sprinklers in the Fill Bank;
- Implement the dust mitigation measures for the site activities;
- Designate proper haul roads to ensure effective water spraying; and
- Ensure all vehicles to be washed before leaving the site egress by provision, operation and maintenance of automatic wheel washing facilities.

#### ***Noise***

- Conduct noisy activities at a farther location from the NSRs.

#### ***Water Quality***

- Maintain the drainage system, including the trapezoidal channels, permanent desilting chambers, DP3 & DP4 regularly;
- Operate and maintain the silt curtains regularly;
- Operate the cleaning vessel within the TKO Basin regularly;
- Provide proper treatment for the oil discharge from the area near air monitoring station TKO-A1;
- Clean up the fill material on the concrete pavement at BHA frequently; and
- Remove the stagnant water or provide approved pesticides for the stagnant water in the permanent desilting chambers, if any.

#### ***Chemical and Waste Management***

- Remove waste materials from the site to avoid accumulation regularly;
- Handle and store chemical wastes properly;
- Remove unwanted material in the existing stockpiles and avoid further dumping of such material;
- Provide and maintain sufficient drip trays for diesel drums, chemical containers, chemical waste storage drums and diesel operated generator set;
- Maintain mesh screen on top of the additional drainage, DP3 to avoid improper dumping of rubbish;
- Maintain good housekeeping at the workshop area;
- Ensure sufficient tarpaulin sheets are provided to cover drip trays; and
- Avoid soil being polluted during oil filling and equipment maintenance; hence, properly remove and store the contaminated soil, if any.

### **Landscape and Visual**

- Provide hydroseeding on the exposed slopes, on which the final profile has been formed;
- Erect all the site hoarding/chaining fences in accordance with agreed design at proper location; and
- Maintain the hydroseeded slopes in accordance with the Landscape Plan.

## **12.0 FUTURE KEY ISSUES**

### **12.1 Work Programme for the Coming Month**

As informed by the Contractor, the activities to be conducted by them in the next month included:

- *Removal & delivery of public fill stockpiled material to Mainland*
- *Operation of the road water lorries and the road sweeper*
- *Maintenance of haul road within fill bank area.*
- *Delivery of public fill received at the Chai Wan Public Fill Barging Point to TKO fill bank*
- *Operation of the queuing area for public truck lorries*
- *Operation of the tipping hall (A1, A2 & A3)*
- *Operation of stone crushing plant at TKOFB*

### **12.2 Key Issues for the Coming Month**

#### **Key issues to be considered in the coming month include:**

- *Chemical and waste management;*
- *Treatment of runoff and wastewater prior to discharge;*
- *Dust generated from loading and unloading activities; and*
- *Dust generated from dump trucks traffic.*

#### **Mitigation measures to be required in the coming month:**

##### Air Quality Impact

- To provide adequate water spraying on haul roads and working platform;
- To operate and maintain automatic wheel washing facilities properly;
- To dampen the fill material prior to unloading or movement;
- To provide road sweeping on haul road near site egress and public roads outside site egress;
- To ensure implementation of the dust mitigation measures for the site activities;
- To maintain proper operation of the mist spraying system;
- To provide proper maintenance for vehicles and machines on site; and
- To investigate any other dust sources around the air sensitive receivers

##### Noise

- To switch off equipment if not in use;
- To operate silent equipment;
- To identify the noise sources inside and outside of the site;
- To follow up any exceedance caused by the Fill Bank operation; and
- To re-schedule the work activities in the event of valid noise exceedance.

##### Water Quality Impact

- To maintain the drainage system in the Fill Bank;
- To ensure the cleanliness of oil interceptor bypass tanks and all the drainage channels;
- To maintain the existing silt trap to ensure good efficiency of wheel wash facilities;
- To repair, inspect and maintain the silt curtains regularly;
- To provide covers for the drip trays to avoid stagnant water pond due to rainfall;
- To provide proper treatment for oily water discharged from the area around air monitoring station TKO-A1;
- To deploy a cleaning vessel to remove floating rubbish in the TKO Basin;
- To clean up the concrete paved area at Portion I every night to avoid fill materials from being washed into the sea; and
- To avoid any stagnant water or provide insecticide to avoid mosquito breeding in the Fill Bank.

Chemical and Waste Management

- To remove waste from the site regularly;
- To properly store and handle chemical wastes on site;
- To implement trip ticket system for all the imported public fill and general refuse disposal;
- To provide and manage sufficiently sized drip trays for diesel drums or chemical containers;
- To remove existing unwanted material in the stockpiles and avoid improper disposal at the Fill Bank through inspection of imported truckloads;
- To maintain proper housekeeping at the workshop area;
- To remove the oil stains in the event of leakage and handle all materials using for this cleaning works as chemical waste;
- To maintain mesh screen on top of the additional drainage, DP3 opening to avoid improper dumping of rubbish into this channel; and
- To identify C&D material by packaging, labeling, storage, transportation and disposal in accordance with statutory regulations.

**12.3 Monitoring Schedule for the Coming Month**

The proposed EM&A program of the coming month is attached in Appendix L.

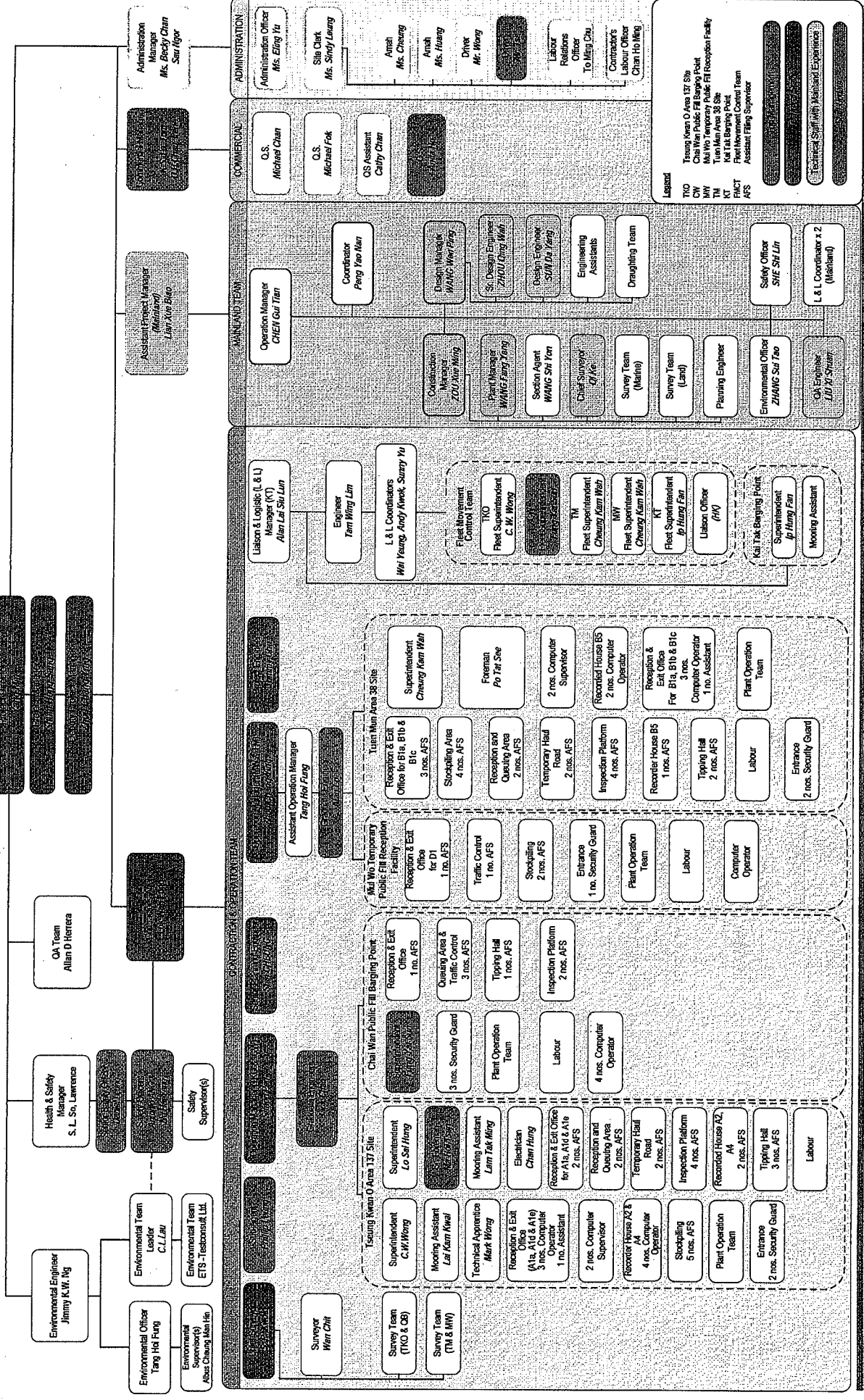
- END OF REPORT -



## **Appendix A**

### **Organization Chart and Lines of Communication**

CONTRACTORS' MANAGEMENT AND SUPERVISION



**Legend**

- TKO: Tsung Kwan O Area 137 Site
- OB: Onshore Berthing Point
- IMV: Kai Tak Berthing Point
- KT: Kai Tak Berthing Point
- AFS: Fleet Movement Control Team
- AFS: Assistant Filing Supervisor

Technical Staff with Mainland Experience

Organisation Chart (Rev.7)  
 Contract No. CV/2009/02  
 Handling of Surplus Public Fill  
 (Revised on 1 September 2011)

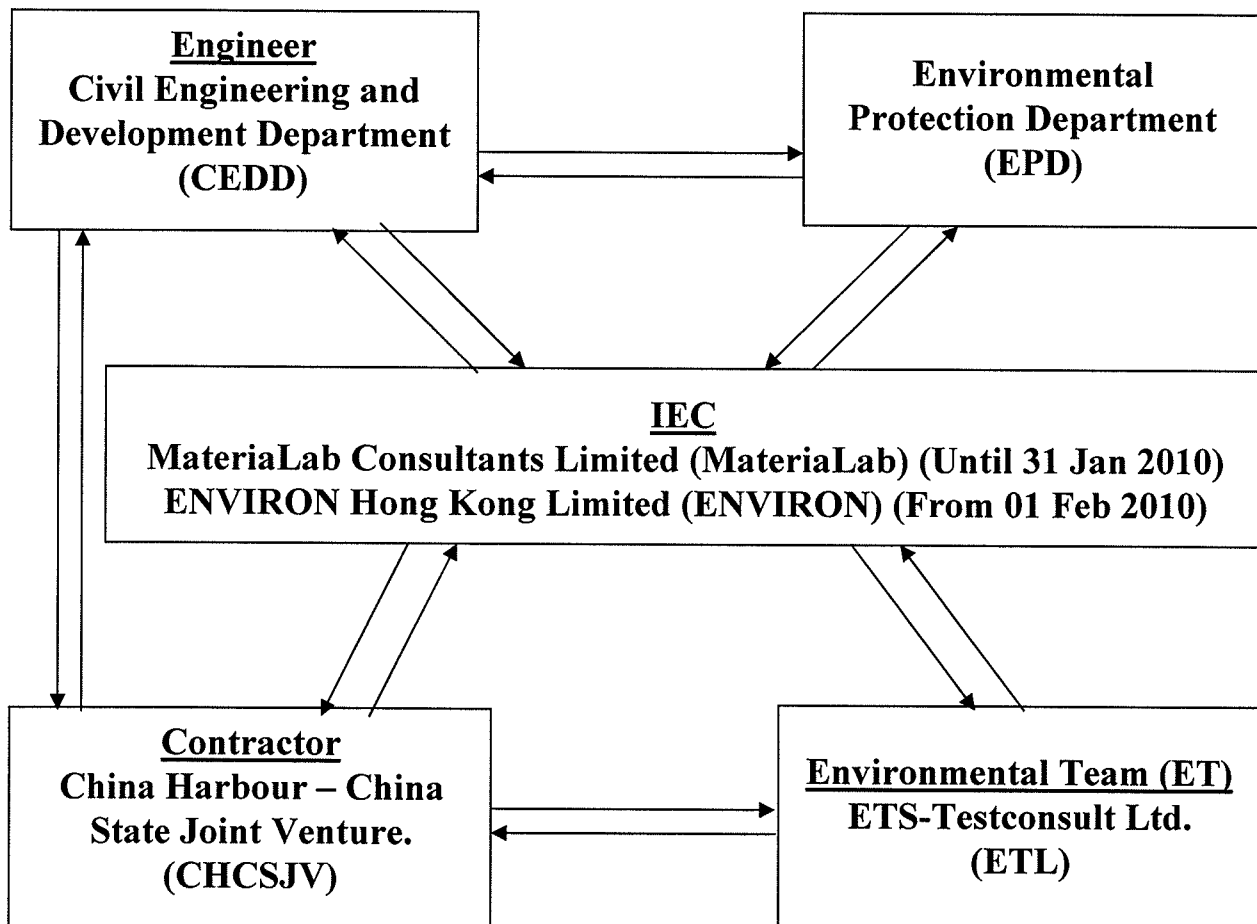


China Harbour - China State Joint Venture



Civil Engineering and Development Department

# Lines of Communication





東業德勤測試顧問有限公司  
ETS-TESTCONSULT LIMITED

## **Appendix B1**

### **Calibration Certificates for Impact Air Quality Monitoring Equipment**



東業德勤測試顧問有限公司  
ETS-TESTCONSULT LIMITED

8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong  
Tel : 2695 8318 E-mail : etl@ets-testconsult.com  
Fax : 2695 3944 Web site : www.ets-testconsult.com

**TEST REPORT**

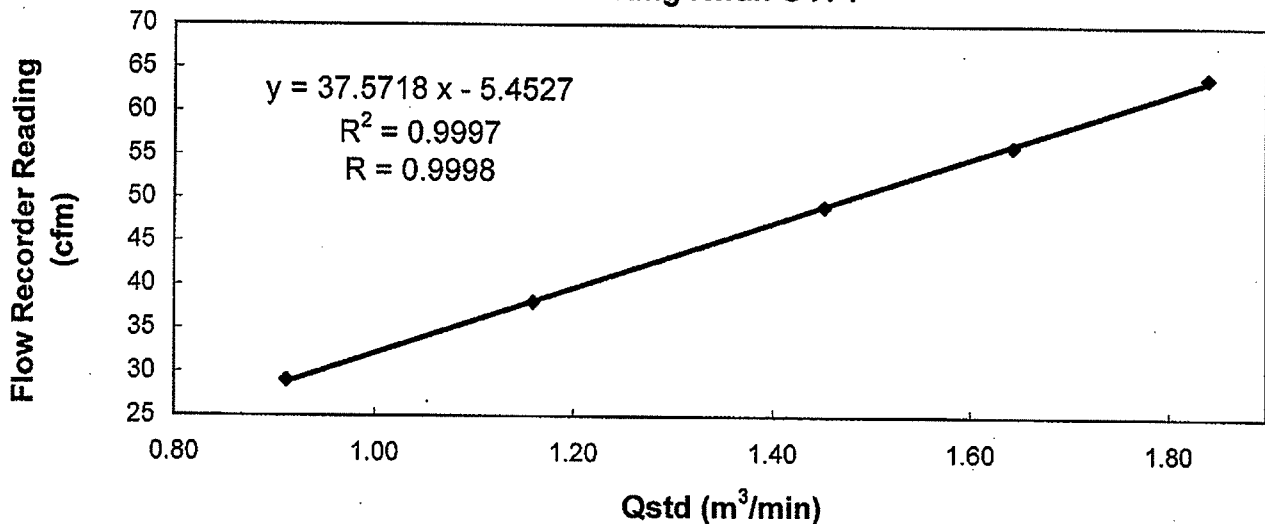
**Calibration Report**  
of  
**High Volume Air Sampler**

**Manufacturer** : Graseby GMW Date of Calibration : 23 November 2011  
**Serial No.** : 10581 (ET/EA/003/22) Calibration Due Date : 22 January 2012  
**Method** : Five-point calibration by using standard calibration kit Tisch TE-5025A refer to the Operations Manual

**Results** :

Flow recorder reading (cfm)	64	56	49	38	29
Qstd (Actual flow rate, m <sup>3</sup> /min)	1.84	1.64	1.45	1.16	0.91
Pressure :	769.56	mm Hg	Temp. :	295	K

**Sampler 10581 Calibration Curve**  
Site: Tseung Kwan O A-1



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration.

The high volume sampler complies\* / ~~does not comply\*~~ with the specified requirements and is deemed acceptable\* / unacceptable\* for use.

Calibrated by : MAK, Kei Wai  
MAK, Kei Wai  
(Assistant Supervisor)

Checked by : LAW, Sau Yee  
LAW, Sau Yee  
(Senior Environmental Officer)



東業德勤測試顧問有限公司  
ETS-TESTCONSULT LIMITED

8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong  
Tel : 2695 8318 E-mail : etl@ets-testconsult.com  
Fax : 2695 3944 Web site : www.ets-testconsult.com

**TEST REPORT**

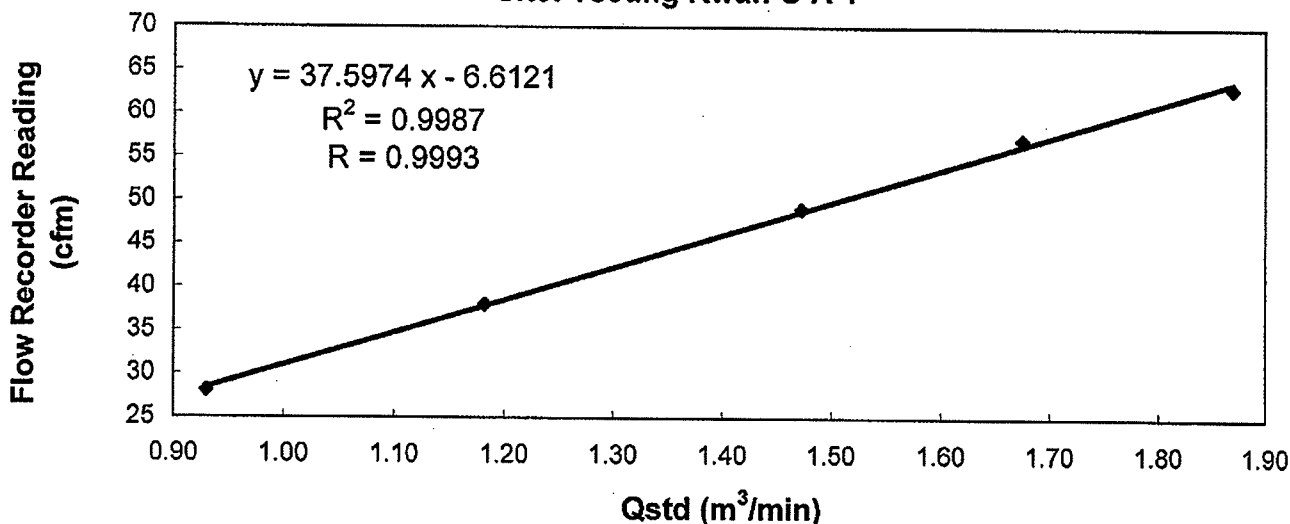
**Calibration Report**  
of  
**High Volume Air Sampler**

Manufacturer : Graseby GMW Date of Calibration : 26 January 2012  
Serial No. : 10581 ( ET / EA / 003 / 22 ) Calibration Due Date : 25 March 2012  
Method : Five-point calibration by using standard calibration kit Tisch TE-5025A refer to the Operations Manual

Results :

Flow recorder reading (cfm)	63	57	49	38	28
Qstd (Actual flow rate, m <sup>3</sup> /min)	1.87	1.68	1.47	1.18	0.93
Pressure :	768.06	mm Hg	Temp. :	283	K

**Sampler 10581 Calibration Curve**  
Site: Tseung Kwan O A-1



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration.

The high volume sampler complies\* / ~~does not comply\*~~ with the specified requirements and is deemed acceptable\* / unacceptable\* for use.

Calibrated by : MAK, Kei Wai  
(Assistant Supervisor)

Checked by : LAW, Sau Yee  
(Senior Environmental Officer)



東業德勤測試顧問有限公司  
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8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong  
Tel : 2695 8318 E-mail : etl@ets-testconsult.com  
Fax : 2695 3944 Web site : www.ets-testconsult.com

**TEST REPORT**

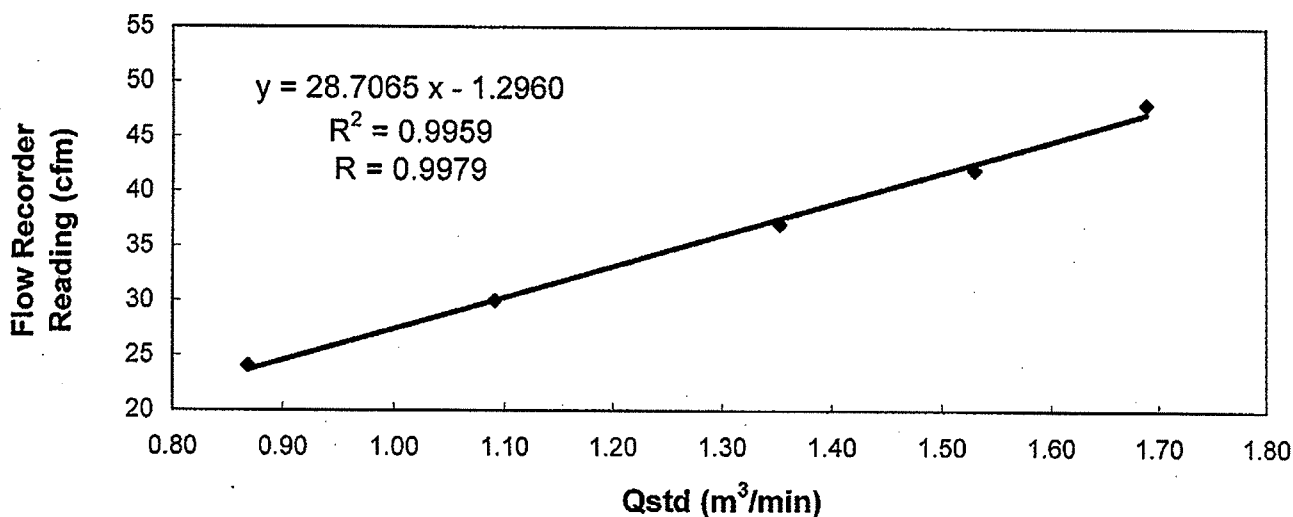
**Calibration Report**  
of  
**High Volume Air Sampler**

**Manufacturer** : Graseby GMW **Date of Calibration** : 23 November 2011  
**Serial No.** : 1172 (ET / EA / 003 / 11) **Calibration Due Date** : 22 January 2012  
**Method** : Five-point calibration by using standard calibration kit Tisch TE-5025A refer to the Operations Manual

**Results** :

Flow recorder reading (cfm)	48	42	37	30	24
Qstd (Actual flow rate, m <sup>3</sup> /min)	1.69	1.53	1.35	1.09	0.87
Pressure :	769.56	mm Hg	Temp. :	295	K

**Sampler 1172 Calibration Curve**  
Site: Tseung Kwan O A-2



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration.

The high volume sampler complies\* / ~~does not comply\*~~ with the specified requirements and is deemed acceptable\* / unacceptable\* for use.

Calibrated by : MAK Kei Wai  
MAK, Kei Wai  
(Assistant Supervisor)

Checked by : LAW Sau Yee  
LAW, Sau Yee  
(Senior Environmental Officer)



東業德勤測試顧問有限公司  
ETS-TESTCONSULT LIMITED

8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong  
Tel : 2695 8318 E-mail : etl@ets-testconsult.com  
Fax : 2695 3944 Web site : www.ets-testconsult.com

**TEST REPORT**

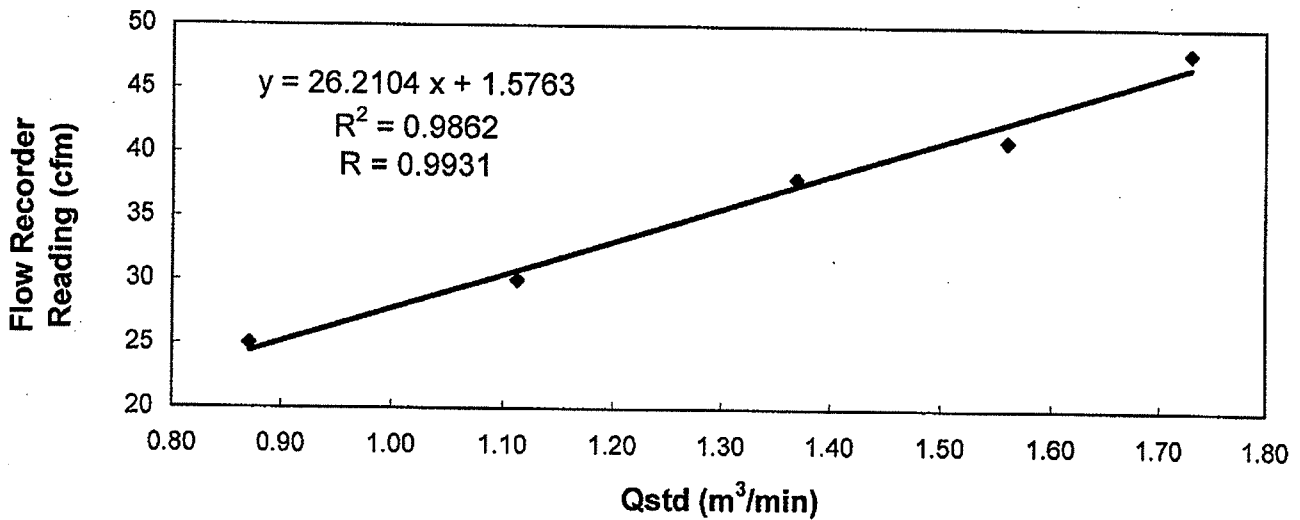
**Calibration Report**  
**of**  
**High Volume Air Sampler**

Manufacturer : Graseby GMW Date of Calibration : 26 January 2012  
Serial No. : 1172 (ET / EA / 003 / 11) Calibration Due Date : 25 March 2012  
Method : Five-point calibration by using standard calibration kit Tisch TE-5025A refer to the Operations Manual

Results :

Flow recorder reading (cfm)	48	41	38	30	25
Qstd (Actual flow rate, m <sup>3</sup> /min)	1.73	1.56	1.37	1.11	0.87
Pressure :	768.06	mm Hg	Temp. :	283	K

**Sampler 1172 Calibration Curve**  
**Site: Tseung Kwan O A-2**



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration.

The high volume sampler complies\* / does not comply\* with the specified requirements and is deemed acceptable\* / unacceptable\* for use.

Calibrated by : MAK Kei Wai  
MAK, Kei Wai  
(Assistant Supervisor)

Checked by : LAW Sau Yee  
LAW, Sau Yee  
(Senior Environmental Officer)





EY/EA/004/28

TISCH ENVIRONMENTAL, INC.  
 145 SOUTH MIAMI AVE.  
 VILLAGE OF CLEVELS, OH 45002  
 513.467.9000  
 877.263.7610 TOLL FREE  
 513.467.9009 FAX  
 WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - May 19, 2011 Rootsmeter S/N 0438320 Ta (K) - 294  
 Operator Tisch Orifice I.D. - 1940 Pa (mm) - 754.38

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4730	3.3	2.00
2	NA	NA	1.00	1.0390	6.4	4.00
3	NA	NA	1.00	0.9270	8.1	5.00
4	NA	NA	1.00	0.8860	8.9	5.50
5	NA	NA	1.00	0.7310	13.0	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
1.0017	0.6800	1.4185	0.9956	0.6759	0.8829
0.9975	0.9600	2.0061	0.9914	0.9542	1.2486
0.9952	1.0736	2.2429	0.9892	1.0671	1.3959
0.9942	1.1222	2.3524	0.9882	1.1153	1.4641
0.9887	1.3526	2.8371	0.9827	1.3444	1.7657
Qstd slope (m)	=	2.10962	Qa slope (m)	=	1.32101
intercept (b)	=	-0.01785	intercept (b)	=	-0.01111
coefficient (r)	=	0.99997	coefficient (r)	=	0.99997

y axis = SQRT [H2O (Pa/760) (298/Ta)]

y axis = SQRT [H2O (Ta/Pa)]

CALCULATIONS

Vstd = Diff. Vol [(Pa-Diff. Hg)/760] (298/Ta)  
 Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]  
 Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m { [SQRT (H2O (Pa/760) (298/Ta))] - b }  
 Qa = 1/m { [SQRT H2O (Ta/Pa)] - b }



## **Appendix B2**

### **Impact Air Quality Monitoring Results**

## Summary of 24-hr TSP Monitoring Results

Monitoring Station : TKO-A1  
Location : Site Egress

Date	Start Time	Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min.)		Average (m <sup>3</sup> /min.)	Filter Weight (g)		Conc. (µg/m <sup>3</sup> )
		Date	Time	Initial	Final		Initial	Final		Initial	Final	
01/01/12	09:00	02/01/12	09:00	17439.33	17463.33	24.00	1.0501	1.0501	1.0501	2.7822	2.9727	126
07/01/12	09:00	08/01/12	09:00	17466.33	17490.33	24.00	1.0501	1.0501	1.0501	2.7746	2.9797	136
13/01/12	15:45	14/01/12	15:45	17494.33	17518.33	24.00	1.0501	1.0501	1.0501	2.7681	2.9789	139
19/01/12	09:00	20/01/12	09:00	17250.33	17544.33	24.00	1.0501	1.0501	1.0501	2.7402	2.9468	149
26/01/12	09:00	27/01/12	09:00	17547.33	17471.33	24.00	1.0802	1.0802	1.0802	2.8012	3.0419	155
31/01/12	14:15	01/02/12	14:15	17574.33	17598.33	24.00	1.0802	1.0802	1.0802	2.7701	3.0003	148

Monitoring Station : TKO-A2a  
Location : new CREO

Date	Start Time	Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min.)		Average (m <sup>3</sup> /min.)	Filter Weight (g)		Conc. (µg/m <sup>3</sup> )
		Date	Time	Initial	Final		Initial	Final		Initial	Final	
01/01/12	09:00	02/01/12	09:00	16632.44	16656.44	24.00	1.2295	1.2295	1.2295	2.7790	2.9753	111
07/01/12	09:00	08/01/12	09:00	16659.44	16683.44	24.00	1.2295	1.2295	1.2295	2.7543	2.9541	113
13/01/12	15:50	14/01/12	15:50	16687.44	16711.44	24.00	1.2295	1.2295	1.2295	2.7650	2.9705	116
19/01/12	09:00	20/01/12	09:00	16713.44	16737.44	24.00	1.2295	1.2295	1.2295	2.7558	2.9846	129
26/01/12	09:00	27/01/12	09:00	16740.44	16764.44	24.00	1.2371	1.2371	1.2371	2.7944	3.0283	131
31/01/12	14:20	01/02/12	14:20	16767.44	16791.44	24.00	1.2371	1.2371	1.2371	2.7812	3.0083	127

## Summary of 1-hr TSP Monitoring Results

Monitoring Station : TKO-A1  
Location : Site Egress

Date	Time		Elapse Time		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min.)		Average (m <sup>3</sup> /min.)	Filter Weight (g)		Conc. (µg/m <sup>3</sup> )
	Start	Finish	Initial	Final		Initial	Final		Initial	Final	
04/01/12	09:45	10:45	17463.33	17464.33	1.00	1.0501	1.0501	1.0501	2.8223	2.8412	300
04/01/12	13:00	14:00	17464.33	17465.33	1.00	1.0501	1.0501	1.0501	2.8188	2.8399	335
06/01/12	14:00	15:00	17465.33	17466.33	1.00	1.0501	1.0501	1.0501	2.7347	2.7561	340
09/01/12	13:00	14:00	17490.33	17491.33	1.00	1.0501	1.0501	1.0501	2.7921	2.8122	319
09/01/12	14:05	15:05	17491.33	17492.33	1.00	1.0501	1.0501	1.0501	2.7601	2.7791	302
11/01/12	09:40	10:40	17492.33	17493.33	1.00	1.0501	1.0501	1.0501	2.7812	2.7991	284
13/01/12	14:00	15:00	17493.33	17494.33	1.00	1.0501	1.0501	1.0501	2.7506	2.7691	294
16/01/12	13:00	14:00	17518.33	17519.33	1.00	1.0501	1.0501	1.0501	2.7546	2.7738	305
18/01/12	09:40	10:40	17519.33	17520.33	1.00	1.0501	1.0501	1.0501	2.7421	2.7601	286
20/01/12	11:35	12:35	17544.33	17545.33	1.00	1.0501	1.0501	1.0501	2.7380	2.7588	330
20/01/12	14:00	15:00	17545.33	17546.33	1.00	1.0501	1.0501	1.0501	2.7440	2.7654	340
21/01/12	09:00	10:00	17546.33	17547.33	1.00	1.0501	1.0501	1.0501	2.7681	2.7872	303
27/01/12	13:00	14:00	17571.33	17572.33	1.00	1.0802	1.0802	1.0802	2.7492	2.7697	316
27/01/12	15:40	16:40	17572.33	17573.33	1.00	1.0802	1.0802	1.0802	2.7421	2.7615	299
30/01/12	09:00	10:00	17573.33	17574.33	1.00	1.0802	1.0802	1.0802	2.8012	2.8213	310

Monitoring Station : TKO-A2a  
Location : New CREO

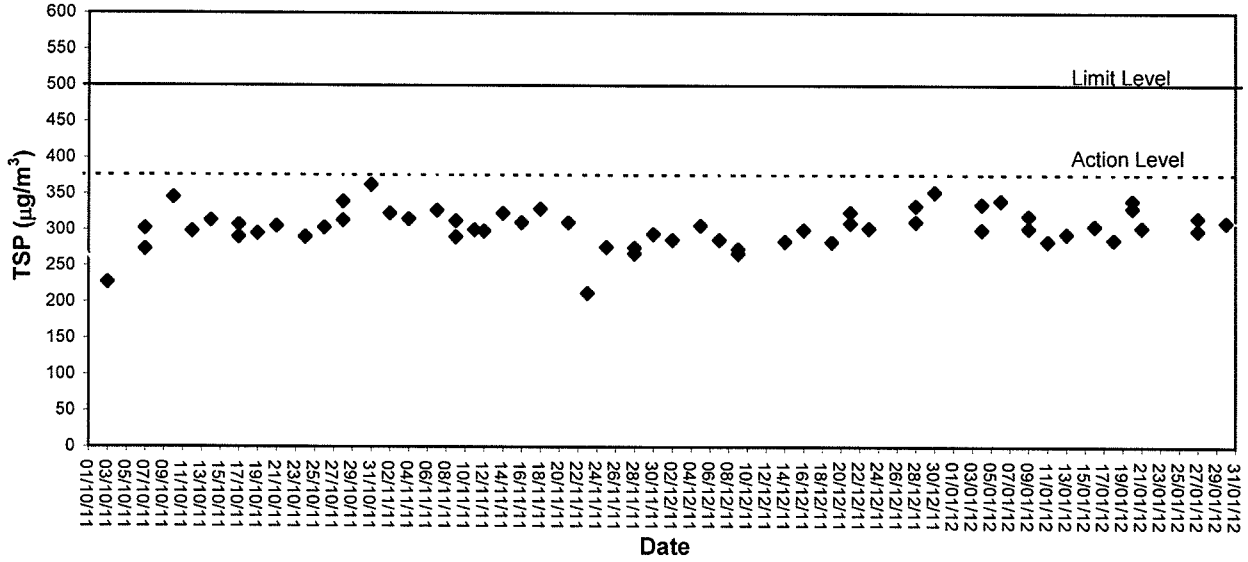
Date	Time		Elapse Time		Sampling Time (hrs)	Flow Rate (m <sup>3</sup> /min.)		Average (m <sup>3</sup> /min.)	Filter Weight (g)		Conc. (µg/m <sup>3</sup> )
	Start	Finish	Initial	Final		Initial	Final		Initial	Final	
04/01/12	09:40	10:40	16656.44	16657.44	1.00	1.2295	1.2295	1.2295	2.8195	2.8419	304
04/01/12	13:10	14:10	16657.44	16658.44	1.00	1.2295	1.2295	1.2295	2.8205	2.8460	346
06/01/12	13:50	14:50	16658.44	16659.44	1.00	1.2295	1.2295	1.2295	2.7516	2.7761	332
09/01/12	13:10	14:10	16683.44	16684.44	1.00	1.2295	1.2295	1.2295	2.7643	2.7858	291
09/01/12	14:15	15:15	16684.44	16685.44	1.00	1.2295	1.2295	1.2295	2.7521	2.7720	270
11/01/12	09:45	10:45	16685.44	16686.44	1.00	1.2295	1.2295	1.2295	2.7901	2.8081	244
13/01/12	14:10	15:10	16686.44	16687.44	1.00	1.2295	1.2295	1.2295	2.7558	2.7750	260
16/01/12	13:10	14:10	16711.44	16712.44	1.00	1.2295	1.2295	1.2295	2.7498	2.7709	286
18/01/12	09:45	10:45	16712.44	16713.44	1.00	1.2295	1.2295	1.2295	2.7601	2.7800	270
20/01/12	11:30	12:30	16737.44	16738.44	1.00	1.2295	1.2295	1.2295	2.7421	2.7677	347
20/01/12	14:05	15:05	16738.44	16739.44	1.00	1.2295	1.2295	1.2295	2.7408	2.7668	352
21/01/12	09:00	10:00	16739.44	16740.44	1.00	1.2295	1.2295	1.2295	2.7720	2.7925	278
27/01/12	13:05	14:05	16764.44	16765.44	1.00	1.2371	1.2371	1.2371	2.7601	2.7817	291
27/01/12	15:45	16:45	16765.44	16766.44	1.00	1.2371	1.2371	1.2371	2.7392	2.7593	271
30/01/12	09:05	10:05	16766.44	16767.44	1.00	1.2371	1.2371	1.2371	2.8114	2.8330	291

## **Appendix B3**

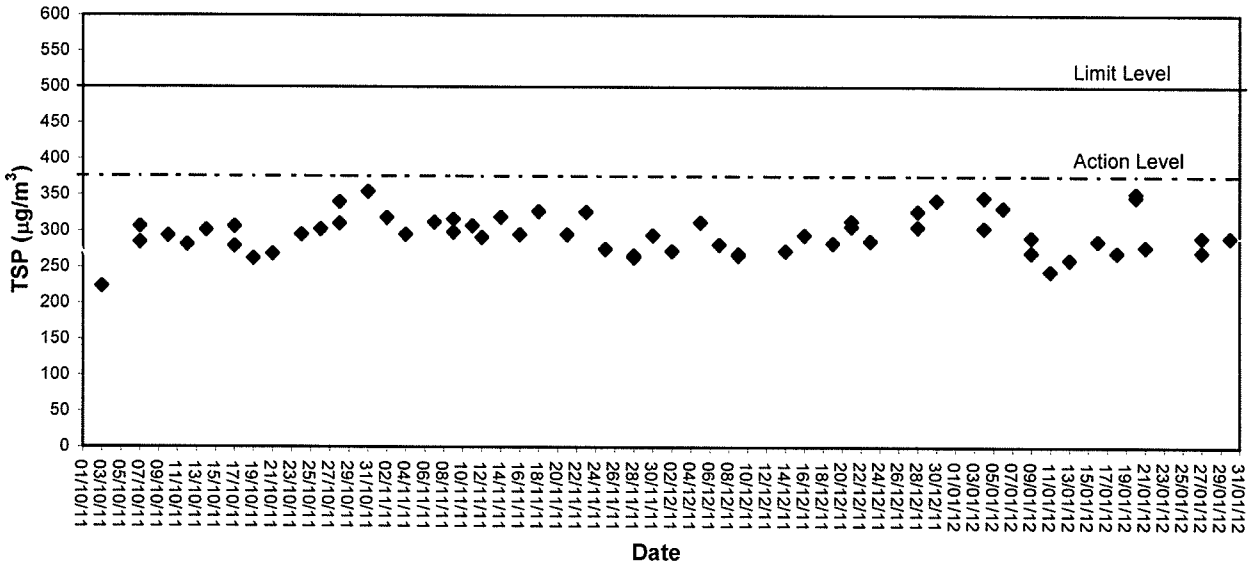
### **Graphical Plots of Impact Air Quality Monitoring Data**



1-hour TSP level at TKO-A1

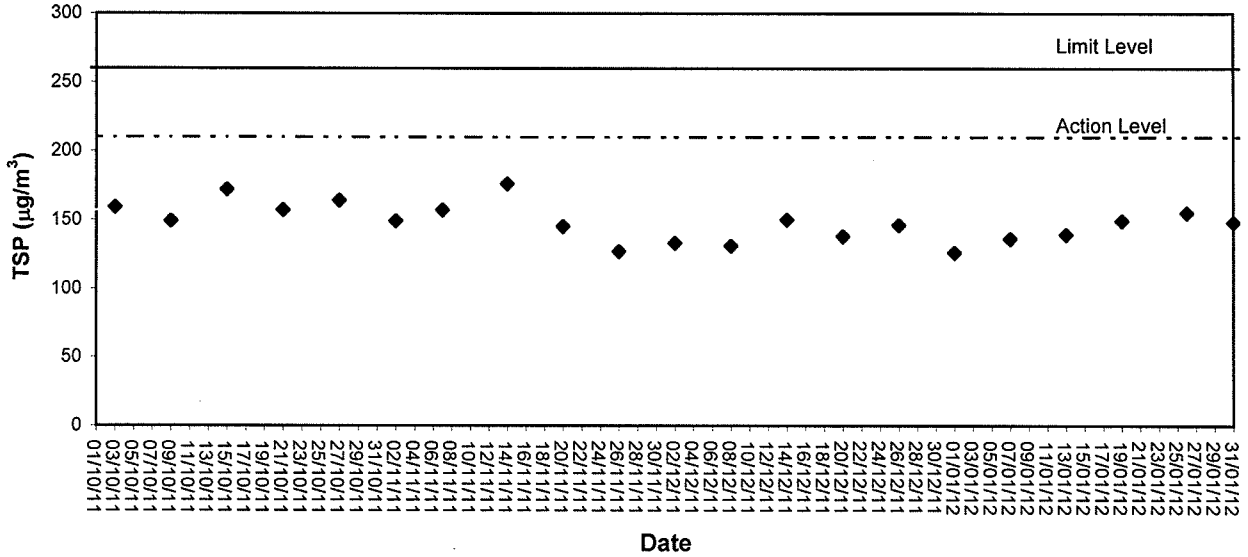


1-hour TSP level at TKO-A2a

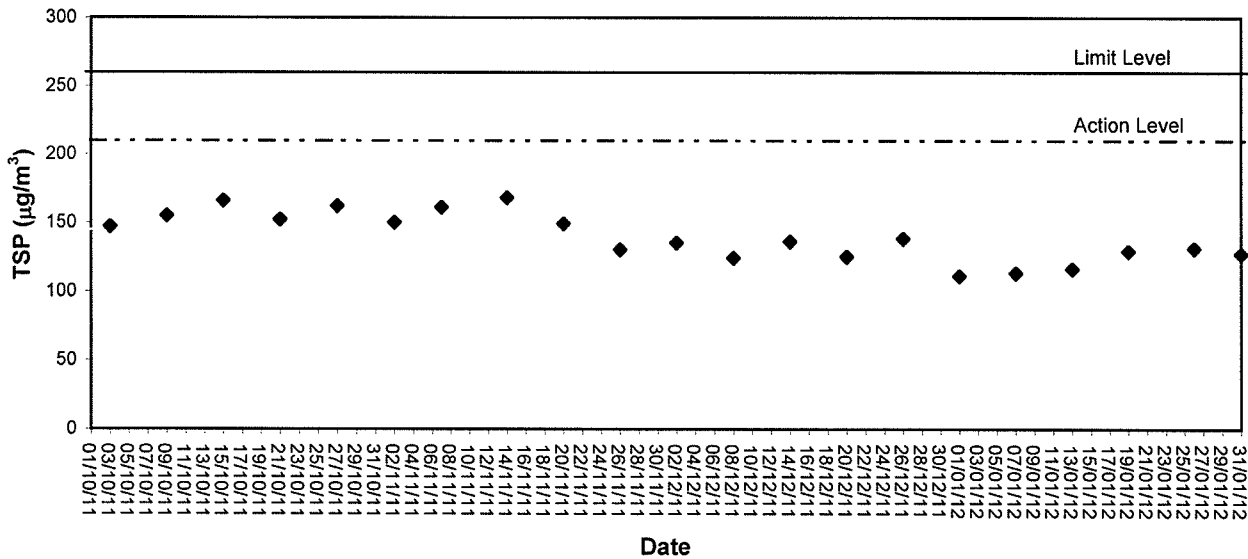




### 24-hour TSP level at TKO-A1



### 24-hour TSP level at TKO-A2a





## **Appendix C1**

### **Calibration Certificates for Impact Noise Monitoring Equipment**





# Calibration Certificate

Certificate No. **16578**

Page 1 of 2 Pages

**Customer :** ETS-Testconsult Limited

**Address :** 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

**Order No. :** Q12677

**Date of receipt :** 2-Nov-11

## Item Tested

**Description :** Sound Level Calibrator

**Manufacturer :** Rion

**Model :** NC-73

**Serial No. :** 10196943

## Test Conditions

**Date of Test :** 7-Nov-11

**Supply Voltage :** --

**Ambient Temperature :** (23 ± 3)°C

**Relative Humidity :** (50 ± 25) %

## Test Specifications

Calibration check.

Ref. Document/Procedure : F21, Z02.

## Test Results

All results were within the manufacturer's specification.

The results are shown in the attached page(s).

Main Test equipment used:

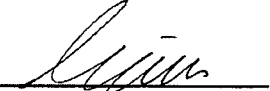
<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S014	Spectrum Analyzer	13535	NIM-PRC & SCL-HKSAR
S024	Sound Level Calibrator	15136	NIM-PRC & SCL-HKSAR
S041	Universal Counter	15610	SCL-HKSAR
S206	Sound Level Meter	04462	SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

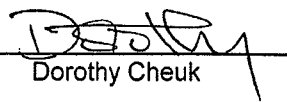
The test equipment used for calibration are traceable to International System of Units (SI).

The test results apply to the above Unit-Under-Test only

**Calibrated by :**

  
P. F. Wong

**Approved by :**

  
Dorothy Cheuk

**Date:** 7-Nov-11

This Certificate is issued by:

Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 8801 Fax: 2425 8646



# Calibration Certificate

Certificate No. 16578

Page 2 of 2 Pages

Results :

## 1. Level Accuracy (at 1 kHz)

UUT Nominal Value	Measured Value	Mfr's Spec.
94 dB	94.21 dB	$\pm 1$ dB

Uncertainty :  $\pm 0.2$  dB

## 2. Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's Spec.
1 kHz	0.989 kHz	$\pm 2$ %

Uncertainty :  $\pm 0.1$  %

## 3. Level Stability : 0.0 dB

Uncertainty :  $\pm 0.01$  dB

## 4. Total Harmonic Distortion : $< 0.4$ %

Mfr's Spec. :  $< 3$  %

Uncertainty :  $\pm 2.3$  % of reading

Remark : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. The above measured values were the mean of 3 measurements.

4. Atmospheric Pressure : 1 005 hPa

----- END -----



# Calibration Certificate

Certificate No. **15347**

Page 1 of 3 Pages

**Customer :** ETS-Testconsult Limited

**Address :** 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

**Order No. :** Q12215

**Date of receipt :** 7-Sep-11

## Item Tested

**Description :** Precision Integrating Sound Level Meter (ET/EN/003/13)

**Manufacturer :** Rion

**Model :** NL-31

**Serial No. :** 00593620

## Test Conditions

**Date of Test :** 8-Sep-11

**Supply Voltage :** --

**Ambient Temperature :** (23 ± 3)°C

**Relative Humidity :** (50 ± 25) %

## Test Specifications

Calibration check.

Ref. Document/Procedure : Z01.

## Test Results

All results were within the IEC 651 Type1 and IEC 804 Type2 specification.

The results are shown in the attached page(s).


Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S017A	Multi-Function Generator	07279	SCL-HKSAR
S024	Sound Level Calibrator	04062	NIM-PRC & SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).  
The test results apply to the above Unit-Under-Test only

Calibrated by :   
P. F. Wong

Approved by :   
Dorothy Cheuk

Date: 8-Sep-11

This Certificate is issued by:  
Hong Kong Calibration Ltd.  
Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.  
Tel: 2425 8801 Fax: 2425 8646

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# Calibration Certificate

Certificate No. **15347**

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Results :

## 1. SPL Accuracy

UUT Setting			Applied Value (dB)	UUT Reading (dB)
Level Range (dB)	Weight	Response		
20 - 100	L <sub>A</sub>	Fast	94.0	93.7
		Slow		93.7
	L <sub>C</sub>	Fast		93.9
	L <sub>p</sub>	Fast		93.9
30 - 120	L <sub>A</sub>	Fast	94.0	93.7
		Slow		93.7
	L <sub>C</sub>	Fast		93.8
	L <sub>p</sub>	Fast		93.8
30 - 120	L <sub>A</sub>	Fast	114.0	113.6
		Slow		113.6
	L <sub>C</sub>	Fast		113.7
	L <sub>p</sub>	Fast		113.7

IEC 651 Type 1 Spec. :  $\pm 0.7$  dB  
Uncertainty :  $\pm 0.1$  dB

## 2. Level Stability : 0.1 dB

IEC 651 Type 1 Spec. :  $\pm 0.3$  dB  
Uncertainty :  $\pm 0.1$  dB

## 3. Linearity

### 3.1 Level Linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec. (Primary Indicator Range)
130	114.0	113.7	0.0	$\pm 0.7$ dB
130	104.0	103.7	0.0	
120	94.0	93.7(Ref.)	--	
110	84.0	83.7	0.0	
100	74.0	73.8	+0.1	
90	64.0	63.8	+0.1	
80	54.0	53.5	-0.2	

Uncertainty :  $\pm 0.1$  dB



# Calibration Certificate

Certificate No. **15347**

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## 3.2 Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	83.7	0.0	± 0.4 dB
	94.0	93.7 (Ref.)	--	
	95.0	94.7	0.0	± 0.2 dB

Uncertainty : ± 0.1 dB

## 4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-39.5	- 39.4 dB, ± 1.5 dB
63 Hz	-26.3	- 26.2 dB, ± 1.5 dB
125 Hz	-16.2	- 16.1 dB, ± 1 dB
250 Hz	-8.6	- 8.6 dB, ± 1 dB
500 Hz	-3.2	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+1.4	+ 1.2 dB, ± 1 dB
4 kHz	+1.2	+ 1.0 dB, ± 1 dB
8 kHz	-1.1	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	-6.6	- 6.6 dB, + 3 dB ~ ∞

Uncertainty : ± 0.1 dB

## 5. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	40.0	40.0	--
1/10	40.0	39.9	± 0.5 dB
1/10 <sup>2</sup>	40.0	39.9	
1/10 <sup>3</sup>	40.0	39.9	± 1.0 dB
1/10 <sup>4</sup>	40.0	40.0	

Uncertainty : ± 0.1 dB

Remark : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. Atmospheric Pressure : 1 000 hPa.

4. The internal calibration reference of UUT was drifted from 94.0 dB to 94.5 dB

## **Appendix C2**

### **Impact Noise Monitoring Results**

## Day-time Noise Monitoring

Monitoring Location: TKO-N1 (Site Egress)

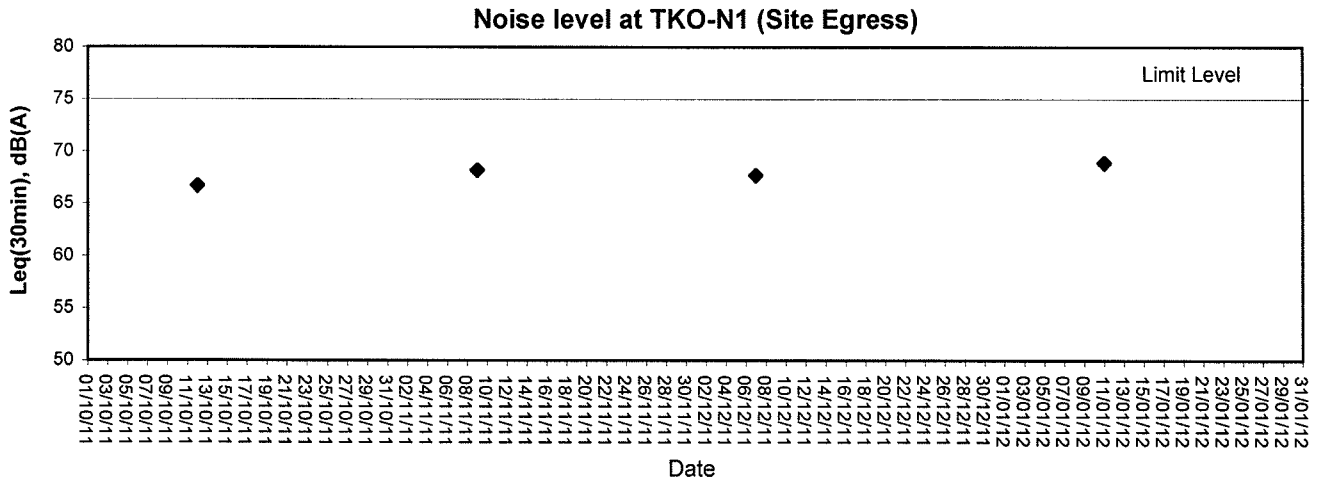
Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		L <sub>eq</sub> (30min)	L <sub>10</sub>	L <sub>90</sub>		
11/01/12	09:40	68.9	70.4	64.4	1.3	Cloudy

## **Appendix C3**

### **Graphical Plots of Impact Noise Monitoring Data**



## Noise Monitoring (Day-time)





## **Appendix D1**

### **Calibration Certificates for Impact Marine Water Quality Monitoring Equipments**



### Internal Calibration Report of Dissolved Oxygen Meter

Equipment Ref. No. : <u>ET/EW/008/002</u>	Manufacturer : <u>YSI</u>
Model No. : <u>85</u>	Serial No. : <u>06 C 1998 AD</u>
Date of Calibration : <u>14/11/2011</u>	Calibration Due Date : <u>13/02/2012</u>

#### *Temperature Verification*

Ref. No. of Reference Thermometer : ET/0521/001

Ref. No. of Water Bath : ET/0533/001

		Temperature (°C)	
Reference Thermometer reading	Measured	20.8	Corrected
			20.5
DO Meter reading	Measured	20.3	Difference
			0.2

#### *Standardization of sodium thiosulphate (Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>) solution*

Reagent No. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> titrant	CPE/012/4.5/001/4	Reagent No. of 0.025N K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>	CPE/012/4.4/001/5
		Trial 1	Trial 2
Initial Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)		0.00	0.00
Final Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)		40.00	39.90
Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> used (ml)		40.00	39.90
Normality of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> solution (N)		0.02500	0.02506
Average Normality (N) of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> solution (N)		0.02503	
Acceptance criteria, Deviation		Less than ± 0.001N	

Calculation: Normality of Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>, N = 1 / ml Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> used

#### *Linearity Checking*

##### *Determination of dissolved oxygen content by Winkler Titration \**

Purging Time (min)	2		5		10	
	1	2	1	2	1	2
Trial						
Initial Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)	0.00	11.30	22.60	0.00	7.80	12.50
Final Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)	11.30	22.60	30.30	7.80	12.50	17.20
Vol. (V) of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> used (ml)	11.30	11.30	7.70	7.80	4.70	4.70
Dissolved Oxygen (DO), mg/L	7.59	7.59	5.17	5.24	3.16	3.16
Acceptance criteria, Deviation	Less than + 0.3mg/L		Less than + 0.3mg/L		Less than + 0.3mg/L	

Calculation: DO (mg/L) = V x N x 8000/298

Purging time, min	DO meter reading, mg/L			Winkler Titration result *, mg/L			Difference (%) of DO Content
	1	2	Average	1	2	Average	
2	7.54	7.59	7.57	7.59	7.59	7.59	0.37
5	5.31	5.32	5.32	5.17	5.24	5.21	2.04
10	3.08	3.06	3.07	3.16	3.16	3.16	2.84
Linear regression coefficient				0.99810			



### Internal Calibration Report of Dissolved Oxygen Meter

**Zero Point Checking**

DO meter reading, mg/L	0.00
------------------------	------

**Salinity Checking**

Reagent No. of NaCl (10ppt)	CPE/012/4.7/001/12	Reagent No. of NaCl (30ppt)	CPE/012/4.8/001/12
-----------------------------	--------------------	-----------------------------	--------------------

**Determination of dissolved oxygen content by Winkler Titration \*\***

Salinity (ppt)	10		30	
	1	2	1	2
Trial				
Initial Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)	0.00	11.70	23.40	34.00
Final Vol. of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (ml)	11.70	23.40	34.00	44.60
Vol. (V) of Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> used (ml)	11.70	11.70	10.60	10.60
Dissolved Oxygen (DO), mg/L	7.86	7.86	7.12	7.12
Acceptance criteria, Deviation	Less than + 0.3mg/L		Less than + 0.3mg/L	

Calculation:  $DO (mg/L) = V \times N \times 8000/298$

Salinity (ppt)	DO meter reading, mg/L			Winkler Titration result**, mg/L			Difference (%) of DO Content
	1	2	Average	1	2	Average	
10	7.87	7.90	7.885	7.86	7.86	7.86	0.29
30	7.11	7.08	7.095	7.12	7.12	7.12	0.39

**Acceptance Criteria**

- (1) Differenc between temperature readings from temperature sensor of DO probe and reference thermometer : < 0.5 °C
- (2) Linear regression coefficient : >0.99
- (3) Zero checking: 0.0mg/L
- (4) Difference (%) of DO content from the meter reading and by winkler titration : within ± 5%

The equipment complies # / ~~does not comply~~ # with the specified requirements and is deemed acceptable # / unacceptable # for use.

\* Delete as appropriate

Calibrated by :

Approved by :



## Performance Check of Salinity Meter

Equipment Ref. No. : ET/EW/008/002      Manufacturer : YSI  
Model No. : 85      Serial No. : 06 C 1998 AD  
Date of Calibration : 14/11/2011      Due Date : 13/02/2012

Ref. No. of Salinity Standard used (30ppt)

S/001/3

Salinity Standard (ppt)	Measured Salinity (ppt)	Difference %
30	30.3	1.00

Acceptance Criteria

Difference : <10 %

The salinity meter complies \* / ~~does not comply~~ \* with the specified requirements and is deemed acceptable \* / ~~unacceptable~~ \* for use. Measurements are traceable to national standards.

Checked by : L. De Car

Approved by : [Signature]



## Performance Check of Turbidimeter

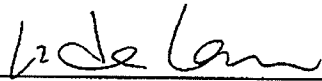
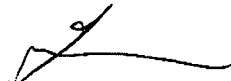
Equipment Ref. No. : ET/0505/007                      Manufacturer : HACH  
Model No. : 2100P                                      Serial No. : 08060 C 030281  
Date of Calibration : 13/10/2011                      Due Date : 12/01/2012

Gelex Vial Std	Theoretical Value (NTU)	Measured Value (NTU)	Difference %
0-10 NTU	5.34	5.28	1.12
10-100 NTU	52.5	52.9	0.76
100-1000 NTU	543	530	2.34

### Acceptance Criteria

Difference : <5 %

The salinity meter complies \* / does not comply \* with the specified requirements and is deemed acceptable \* / unacceptable \* for use. Measurements are traceable to national standards.

Checked by :                       Approved by : 

## Performance Check of Turbidimeter

Equipment Ref. No. : ET/0505/007                      Manufacturer : HACH

Model No. : 2100P                                              Serial No. : 08060 C 030281


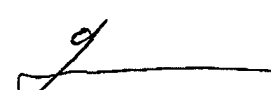
Date of Calibration : 13/01/2012                      Due Date : 12/04/2012

Gelex Vial Std	Theoretical Value (NTU)	Measured Value (NTU)	Difference %
0-10 NTU	5.34	5.26	1.50
10-100 NTU	52.5	53.1	1.14
100-1000 NTU	543	538	0.92

### Acceptance Criteria

Difference : <5 %

The salinity meter complies \* / ~~does not comply~~ \* with the specified requirements and is deemed acceptable \* / ~~unacceptable~~ \* for use. Measurements are traceable to national standards.

Checked by :                       Approved by : 

## **Appendix D2**

### **Impact Marine Water Quality Monitoring Results**



# Mid-Flood Tide



東業德動測試顧問有限公司  
ETS-TESTCONSULT LIMITED

Monitoring Station : TKO-C1

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)			Turbidity (NTU)			Suspended Solids (mg/L)		
			Surface	Middle		Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
04/01/12	1427-1445	14/Cloudy	Surface	1.0	17.0	29.9	29.9	6.37	6.39	83.4	83.6	3.04	3.07	4.0	4.1	3.25	4.4	4.4	4.4
			Middle	10.3	17.4	30.4	30.5	5.98	6.00	83.8	78.6	3.10	3.30	4.2	4.4				
			Bottom	19.6	17.6	31.0	31.0	5.73	5.75	78.3	75.3	3.28	3.39	4.4	4.6				
06/01/12	1430-1445	14/Cloudy	Surface	1.0	18.3	30.0	30.0	6.72	6.70	95.4	95.2	3.03	3.05	4.0	4.1	3.16	4.3	4.3	4.3
			Middle	9.2	18.7	30.7	30.7	6.68	6.59	94.9	93.6	3.07	3.15	4.2	4.3				
			Bottom	17.4	18.9	31.6	31.6	6.51	6.49	93.7	92.2	3.13	3.27	4.4	4.6				
09/01/12	1630-1645	16/Sunny	Surface	1.0	19.8	30.9	30.9	6.21	6.20	88.1	88.0	3.21	3.23	4.4	4.3	3.71	5.1	5.1	4.8
			Middle	10.2	20.1	31.5	31.5	6.19	6.05	87.8	85.9	3.24	3.94	4.2	5.1				
			Bottom	19.4	20.3	31.8	31.8	6.07	5.92	86.1	83.4	3.92	3.97	5.0	5.1				
11/01/12	0800-0815	15/Cloudy	Surface	1.0	18.0	30.0	30.0	6.77	6.76	95.5	95.3	3.03	3.05	4.0	4.0	3.14	4.1	4.1	4.1
			Middle	9.2	18.5	30.6	30.6	6.74	6.64	95.0	93.6	3.06	3.14	4.0	4.1				
			Bottom	17.4	18.9	31.7	31.7	6.65	6.51	93.8	91.7	3.12	3.23	4.0	4.1				
13/01/12	0917-0930	16/Cloudy	Surface	1.0	17.2	29.3	29.3	6.71	6.74	88.5	88.9	2.94	2.97	4.0	4.0	3.16	4.2	4.2	4.2
			Middle	10.4	17.4	29.7	29.8	6.69	6.41	89.3	84.6	3.13	3.15	4.0	4.2				
			Bottom	19.8	17.7	30.5	30.6	6.43	6.06	84.3	79.9	3.17	3.36	4.2	4.4				
16/01/12	1130-1145	16/Cloudy	Surface	1.0	18.1	30.0	30.0	6.72	6.71	94.1	93.9	3.04	3.06	4.0	4.1	3.15	4.2	4.2	4.2
			Middle	9.3	18.6	30.8	30.8	6.69	6.59	93.7	92.1	3.07	3.15	4.0	4.2				
			Bottom	17.6	19.1	31.6	31.7	6.60	6.48	92.3	90.7	3.14	3.25	4.2	4.4				
18/01/12	1335-1355	17/Fine	Surface	1.0	17.9	29.6	29.7	6.72	6.70	88.7	88.4	3.06	3.08	4.0	4.1	3.31	4.4	4.4	4.4
			Middle	10.4	17.6	30.2	30.2	6.67	6.36	88.0	83.8	3.10	3.33	4.0	4.4				
			Bottom	19.8	17.4	30.9	31.0	6.34	6.04	83.6	79.7	3.31	3.53	4.4	4.6				
20/01/12	1445-1505	19/Cloudy	Surface	1.0	18.3	29.9	30.0	6.77	6.75	89.3	89.1	3.56	2.98	4.0	4.0	3.20	4.3	4.3	4.3
			Middle	10.6	18.5	30.5	30.6	6.73	6.43	88.8	84.8	3.00	3.23	4.0	4.3				
			Bottom	20.2	18.8	31.2	31.3	6.46	6.18	85.2	81.5	3.26	3.41	4.4	4.5				

# Mid-Flood Tide

Monitoring Station : TKO-C1

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)			Turbidity (NTU)			Suspended Solids (mg/L)		
			Surface	Middle		Bottom	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	Value	Average	Depth-average	Value	Average
27/01/12	0920-0940	14/Cloudy	Surface	1.0	14.7	29.8	29.9	6.70	6.72	6.57	89.1	89.4	3.12	3.15	4.0	4.1	3.36	4.6	4.5
						29.9		6.74			89.6		3.17						
			Middle	10.6	15.0	30.5	30.6	6.44	6.42	85.6	85.4	3.34	3.37	4.6	4.6				
						30.6		6.40		85.1		3.40							
			Bottom	20.2	15.2	31.1	31.2	6.08	6.11	80.8	81.2	3.60	3.58	4.8	4.8				
						31.2		6.13		81.5		3.55							
30/01/12	0930-0945	15/Cloudy	Surface	1.0	17.6	30.7	30.8	6.28	6.26	6.16	86.6	86.4	3.21	3.20	4.4	4.3	3.74	5.0	4.8
						30.8		6.24			86.1		3.18						
			Middle	10.2	18.8	31.2	31.2	6.07	6.06	83.7	83.5	4.04	4.06	5.0	5.1				
						31.1		6.04		83.3		4.07							
			Bottom	19.4	19.0	31.6	31.6	5.97	5.96	81.7	81.5	3.98	3.97	5.0	5.0				
						31.5		5.94		81.3		3.95							

# Mid-Flood Tide



東業 德動 測 試 顧 問 有 限 公 司  
ETS-TESTCONSULT LIMITED

Monitoring Station : TKO-M4

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)			Turbidity (NTU)			Suspended Solids (mg/L)		
			Surface	Middle		Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
04/01/12	1350-1410	14/Cloudy	Surface	1.0	17.0	29.9	29.9	6.29	6.32	82.3	82.7	2.97	3.00	4.0	4.1	3.15	4.3		
			Middle	4.8	17.1	29.9	29.0	6.08	6.06	79.6	79.3	3.03	3.14	4.2	4.3				
			Bottom	8.6	17.3	29.0	30.6	6.03	5.83	78.9	76.3	3.12	3.32	4.4	4.5				
06/01/12	1515-1530	14/Cloudy	Surface	1.0	18.3	30.0	30.1	6.84	6.83	97.1	96.9	3.02	3.03	4.0	4.1	3.09	4.1		
			Middle	4.8	18.4	30.4	30.4	6.76	6.75	96.0	95.8	3.07	3.09	4.0	4.1				
			Bottom	8.6	18.6	30.4	30.8	6.73	6.66	95.6	94.6	3.10	3.15	4.2	4.2				
09/01/12	1715-1730	16/Sunny	Surface	1.0	19.7	30.9	30.9	6.17	6.16	87.6	87.4	3.30	3.32	4.4	4.4	3.63	4.8		
			Middle	4.8	20.2	31.5	31.6	5.98	5.97	84.9	84.7	3.74	3.72	4.4	4.8				
			Bottom	8.6	20.2	31.6	31.8	5.95	5.96	84.4	84.6	3.70	3.86	4.8	5.1				
11/01/12	0845-0900	15/Cloudy	Surface	1.0	18.0	29.9	29.9	6.83	6.82	84.7	84.6	3.87	2.99	3.8	3.9	3.04	4.0		
			Middle	4.8	18.2	29.9	30.4	6.80	6.73	95.9	94.8	2.97	3.03	4.0	4.0				
			Bottom	8.6	18.4	30.4	30.9	6.71	6.65	94.6	93.7	3.02	3.11	4.0	3.9				
13/01/12	0850-0905	16/Cloudy	Surface	1.0	17.2	29.2	29.2	6.75	6.73	89.1	88.8	3.12	2.91	3.8	3.9	3.08	4.1		
			Middle	5.1	17.3	29.3	29.4	6.70	6.53	88.4	86.2	2.93	3.08	4.0	4.1				
			Bottom	9.2	17.3	29.4	29.9	6.55	6.13	86.4	80.9	3.10	3.27	4.2	4.3				
16/01/12	1215-1230	16/Cloudy	Surface	1.0	18.1	29.9	29.9	6.76	6.75	94.6	94.5	3.30	3.04	4.0	4.1	3.11	4.2		
			Middle	4.8	18.3	30.4	30.4	6.69	6.68	93.7	93.5	3.05	3.11	4.0	4.1				
			Bottom	8.6	18.7	30.4	30.9	6.66	6.59	92.1	92.3	3.12	3.18	4.2	4.3				
18/01/12	1300-1318	17/Fine	Surface	1.0	17.9	29.7	29.7	6.60	6.63	87.1	87.4	3.16	3.02	3.8	3.90	3.17	4.1		
			Middle	5.1	17.8	29.7	29.8	6.65	6.37	87.7	84.1	3.19	3.12	4.0	4.10				
			Bottom	9.2	17.5	29.8	30.4	6.66	6.12	84.3	80.8	3.03	3.39	4.0	4.30				
20/01/12	1415-1432	19/Cloudy	Surface	1.0	18.3	29.9	29.9	6.75	6.73	80.5	80.8	3.40	2.94	4.4	4.1	3.13	4.2		
			Middle	5.2	18.2	30.1	30.2	6.55	6.53	89.1	88.8	2.91	2.94	4.0	4.1				
			Bottom	9.4	18.4	30.2	30.6	6.24	6.26	86.4	86.1	3.27	3.29	4.2	4.3				
						30.6	30.6	6.28	6.26	82.8	82.6	3.31	3.29	4.4	4.3				



**Mid-Ebb Tide**

**Monitoring Station : TKO-C1**

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)	Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)			Turbidity (NTU)			Suspended Solids (mg/L)		
					Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
04/01/12	0930-0950	13/Cloudy	Surface	16.9	29.8	29.9	6.25	6.27	6.09	81.8	82.1	3.24	3.27	4.2	4.3	4.5		
			Middle	17.3	30.4	30.4	5.94	5.91	77.8	77.3	3.30	3.43	4.4	4.4				
			Bottom	17.5	30.9	31.0	5.87	5.68	76.8	74.4	3.41	3.51	4.4	4.7				
06/01/12	1030-1045	12/Cloudy	Surface	18.2	30.1	30.1	6.75	6.73	6.68	95.8	95.6	3.01	3.03	4.0	4.0	4.2		
			Middle	18.6	30.6	30.7	6.64	6.62	94.3	94.0	3.09	3.11	4.0	4.2				
			Bottom	18.8	31.5	31.6	6.60	6.51	93.7	92.5	3.12	3.20	4.2	4.3				
09/01/12	1100-1115	16/Sunny	Surface	19.5	30.7	30.8	6.30	6.28	6.17	92.2	89.1	3.22	3.42	4.6	4.6	4.9		
			Middle	19.8	31.4	31.5	6.07	6.06	88.7	85.9	3.43	3.83	5.0	4.9				
			Bottom	20.1	31.8	31.8	6.04	5.97	86.1	84.7	3.82	3.92	4.8	5.2				
11/01/12	1300-1315	17/Cloudy	Surface	18.1	29.9	29.9	5.98	6.72	6.67	84.4	94.7	3.90	3.06	4.0	4.0	4.1		
			Middle	18.6	30.6	30.6	6.73	6.62	94.9	93.3	3.05	3.16	4.0	4.1				
			Bottom	19.0	31.6	31.6	6.63	6.50	94.5	91.6	3.14	3.26	4.2	4.3				
13/01/12	1512-1530	15/Drizzle	Surface	17.3	29.4	29.4	6.51	6.53	6.39	91.8	86.2	3.24	3.09	4.0	4.1	4.3		
			Middle	17.5	29.8	29.9	6.48	6.25	86.5	82.5	3.05	3.23	4.0	4.3				
			Bottom	17.7	30.6	30.7	6.23	5.89	82.2	77.7	3.12	3.43	4.4	4.5				
16/01/12	1700-1715	14/Cloudy	Surface	18.2	29.9	29.9	5.92	6.72	6.66	77.3	94.6	3.45	3.05	4.0	4.0	4.2		
			Middle	18.6	30.7	30.7	6.70	6.60	94.8	93.0	3.03	3.15	4.0	4.1				
			Bottom	19.1	31.7	31.7	6.58	6.49	93.3	91.6	3.17	3.26	4.0	4.4				
18/01/12	0915-0935	17/Fine	Surface	17.8	29.7	29.8	6.48	6.42	6.30	91.4	84.7	3.24	3.21	4.2	4.2	4.4		
			Middle	17.5	30.2	30.3	6.44	6.18	85.0	81.6	3.18	3.44	4.2	4.4				
			Bottom	17.4	31.0	31.0	6.20	5.90	84.4	77.8	3.23	3.64	4.4	4.6				
20/01/12	1040-1055	17/Cloudy	Surface	18.2	30.0	30.0	5.93	6.56	6.39	78.1	86.5	3.66	3.28	4.2	4.3	4.5		
			Middle	18.5	30.6	30.6	6.53	6.23	86.8	82.2	3.25	3.47	4.4	4.6				
			Bottom	18.7	31.2	31.2	6.26	5.98	86.1	78.9	3.30	3.63	4.6	4.7				

**Mid-Ebb Tide**



**Monitoring Station : TKO-C1**

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)	Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)		Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Depth-average	Value	Average
27/01/12	1450-1510	16/Cloudy	Surface	15.0	29.9	30.0	6.53	6.51	86.8	86.5	3.24	3.27	4.4	4.4	4.7	
			Middle	15.3	30.6	6.48	6.23	86.1	82.8	3.30	3.48	4.4	4.6	4.7		
			Bottom	15.5	30.7	6.20	5.92	82.4	78.7	3.54	3.68	4.6	4.8	4.9		
30/01/12	1600-1615	15/Cloudy	Surface	17.8	31.2	31.3	5.89	6.22	79.0	85.8	3.73	3.72	5.0	4.9	5.0	
			Middle	19.0	30.8	6.20	6.05	85.5	83.5	3.74	3.70	5.0	4.8	5.0		
			Bottom	19.2	31.1	6.03	5.93	86.1	81.2	3.96	3.93	5.0	5.0	5.2		
					31.2	31.5	6.07	5.93	83.7	80.9	4.03	4.05	5.2	5.2		
					31.4	31.4	5.91		80.9		4.06					

**Mid-Ebb Tide**



**Monitoring Station : TKO-M4**

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)			Turbidity (NTU)			Suspended Solids (mg/L)		
			Surface	Middle		Value	Average	Depth-average	Value	Average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average	
04/01/12	0900-0917	13/Cloudy	Surface	1.0	17.0	29.8	29.8	6.21	6.19	6.08	81.3	81.1	3.18	3.15	4.2	4.1	4.3		
			Middle	4.4	17.0	29.8	29.9	5.99	5.97	6.08	80.8	78.2	3.12	3.31	4.0	4.4			
			Bottom	7.8	17.3	29.9	30.4	5.95	5.80	5.80	77.9	76.0	3.33	3.39	4.4	4.4			
06/01/12	1115-1130	12/Cloudy	Surface	1.0	18.1	30.4	30.4	5.78	6.86	6.81	75.7	97.4	3.40	2.96	4.6	4.0	4.0		
			Middle	4.3	18.3	30.4	30.0	5.82	6.77	6.81	97.6	96.1	3.37	3.03	4.0	4.0			
			Bottom	7.6	18.5	30.7	30.7	6.69	6.68	6.68	95.9	94.9	3.04	3.09	4.2	4.1			
09/01/12	1145-1200	16/Sunny	Surface	1.0	19.6	30.7	30.7	6.67	6.36	6.22	94.7	90.2	3.10	3.59	4.6	4.7	4.8		
			Middle	4.4	19.9	30.9	30.9	6.34	6.08	6.08	90.0	86.2	3.60	3.72	4.8	4.8			
			Bottom	7.8	20.2	31.5	31.6	6.09	6.03	6.03	86.4	85.5	3.73	3.68	4.8	4.8			
11/01/12	1345-1400	17/Cloudy	Surface	1.0	18.0	31.8	31.8	6.01	6.77	6.72	85.3	95.4	3.66	3.03	3.8	3.9	4.1		
			Middle	4.4	18.2	30.0	30.3	6.78	6.67	6.59	95.6	94.1	3.01	3.07	4.0	4.1			
			Bottom	7.8	18.5	29.9	30.3	6.69	6.59	6.59	93.1	92.9	3.08	3.14	4.2	4.3			
13/01/12	1442-1500	15/Drizzle	Surface	1.0	17.3	30.9	30.9	6.60	6.50	6.43	92.6	85.8	3.12	3.12	4.4	4.0	4.2		
			Middle	4.8	17.4	29.4	29.5	6.48	6.36	6.36	85.5	83.8	3.15	3.17	4.0	4.1			
			Bottom	8.6	17.4	29.5	29.5	6.52	5.93	5.93	84.0	78.2	3.19	3.34	4.0	4.4			
16/01/12	1745-1800	14/Cloudy	Surface	1.0	18.1	29.8	29.8	5.96	6.74	6.70	78.6	95.0	3.31	3.02	4.4	4.0	4.2		
			Middle	4.4	18.3	30.0	30.4	5.90	6.65	6.65	77.8	93.8	3.36	3.09	4.0	4.3			
			Bottom	7.8	18.6	29.9	30.3	6.73	6.57	6.57	93.9	92.6	3.07	3.17	4.4	4.4			
18/01/12	0845-0900	17/Fine	Surface	1.0	17.7	30.8	30.8	6.59	6.36	6.26	92.9	83.9	3.16	3.14	4.4	4.0	4.3		
			Middle	4.5	17.6	29.8	29.9	6.55	6.16	6.16	92.3	81.2	3.18	3.28	4.0	4.4			
			Bottom	8.0	17.5	29.9	30.4	6.38	5.97	5.97	84.2	78.8	3.12	3.51	4.4	4.6			
20/01/12	1108-1125	17/Cloudy	Surface	1.0	18.2	30.4	30.4	6.33	6.52	6.42	82.3	86.1	3.18	3.21	4.8	4.3	4.5		
			Middle	4.6	18.2	29.9	30.0	6.50	6.33	6.33	79.0	83.4	3.53	3.35	4.4	4.4			
			Bottom	8.2	18.4	30.0	30.1	6.54	6.13	6.13	85.8	80.9	3.18	3.56	4.4	4.7			

**Mid-Ebb Tide**

**Monitoring Station : TKO-M4**

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)			Turbidity (NTU)			Suspended Solids (mg/L)		
			Surface	Middle		Bottom	Value	Average	Depth-average	Value	Average	Depth-average	Value	Average	Depth-average	Value	Average	Depth-average	
27/01/12	1415-1432	16/Cloudy	Surface	1.0	15.0	30.0	30.0	6.51	6.54	86.5	86.9	3.20	3.23	4.2	4.3				
			Middle	4.9		30.0		6.56		87.2		3.25		4.4					
			Bottom	8.8		30.2		6.40		85.1		3.33		4.4					
30/01/12	1645-1700	15/Cloudy	Surface	1.0	17.8	30.7	30.9	6.34	6.16	84.3	84.9	3.37	3.56	4.6	4.5				
			Middle	4.4		30.8		6.05		80.4		3.57		4.8					
			Bottom	7.8		30.9		6.00		79.8		3.54		4.8					
			Surface	1.0		31.3		6.17		85.1		3.52		4.6					
			Middle	4.4		31.4		6.08		83.9		3.73		4.8					
			Bottom	7.8		31.5		5.87		80.4		3.79		5.0					
						31.5	5.86	80.3	3.78	4.8									

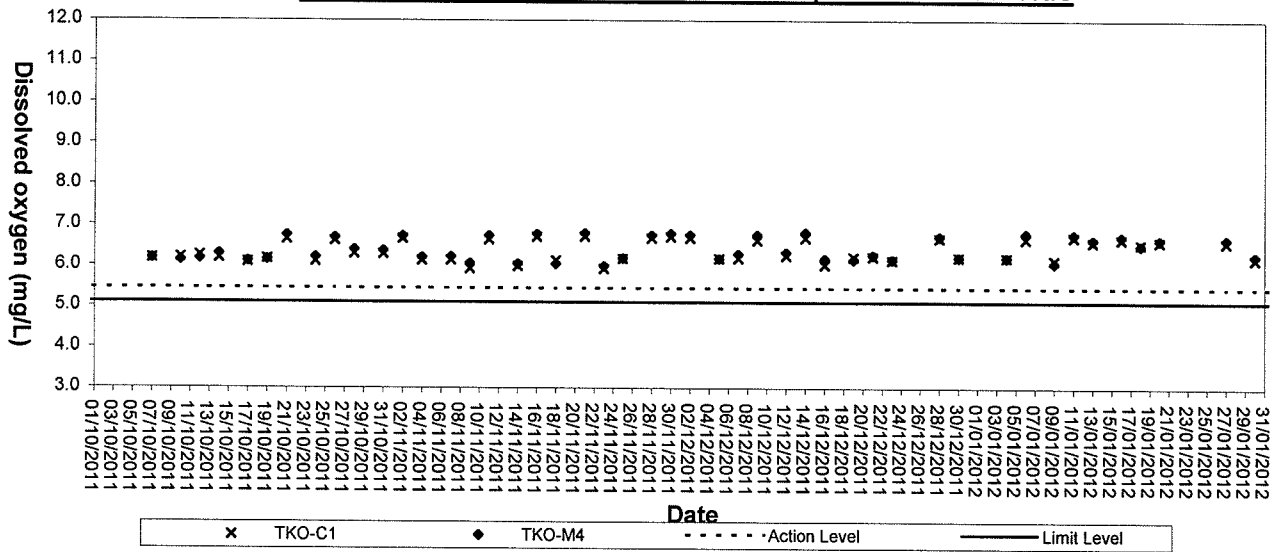


## **Appendix D3**

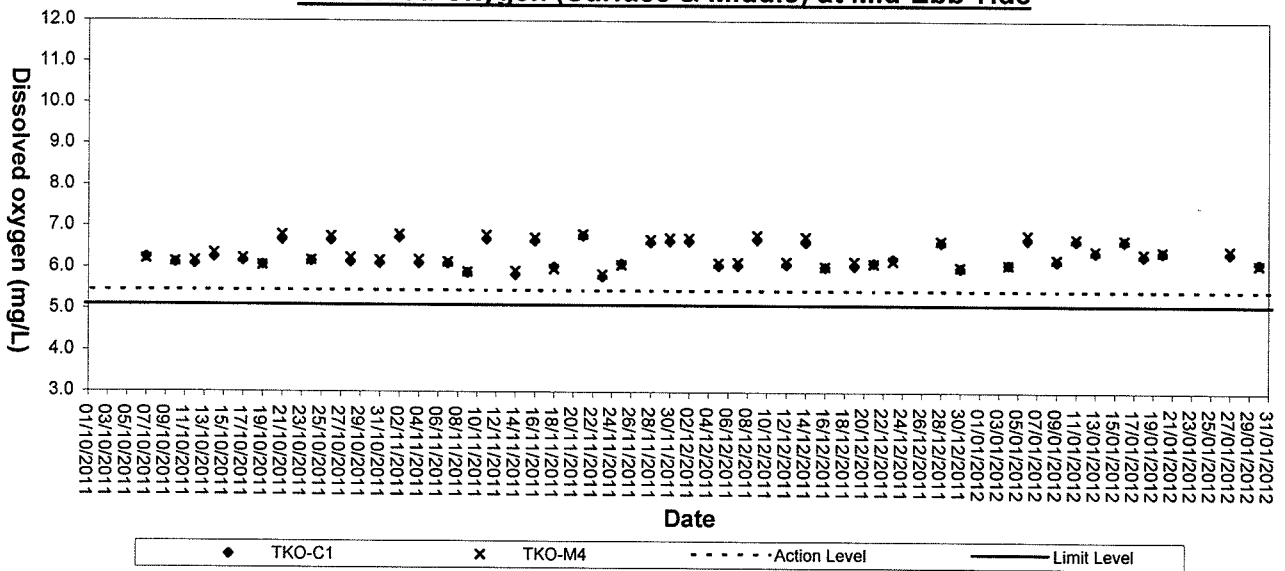
### **Graphical Plots of Impact Marine Water Quality Monitoring Data**



### Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide

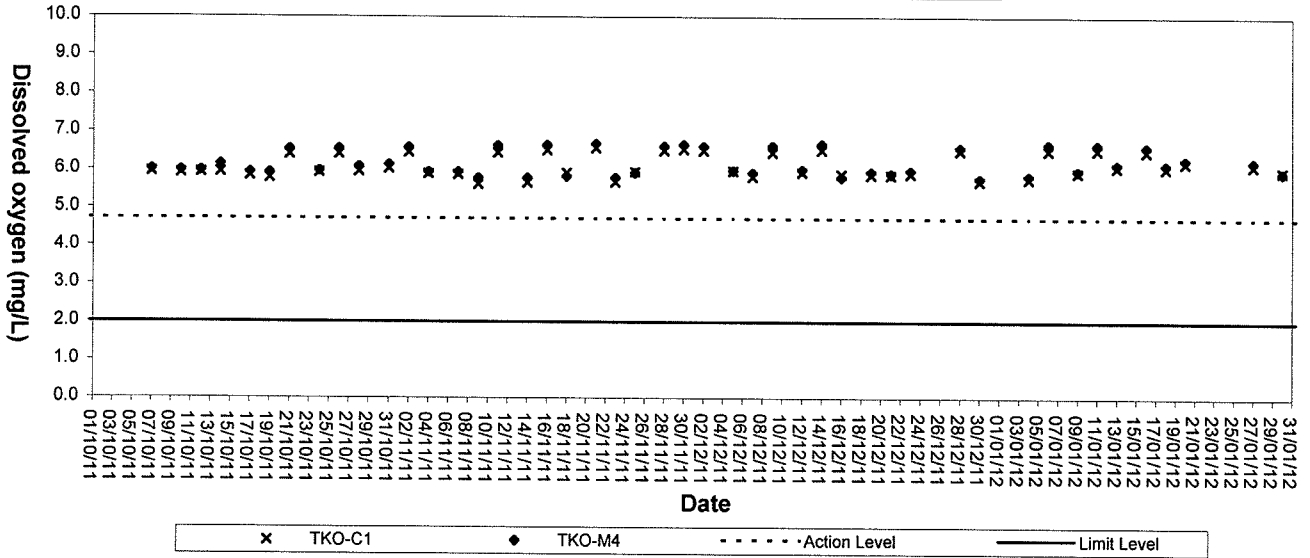


### Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide

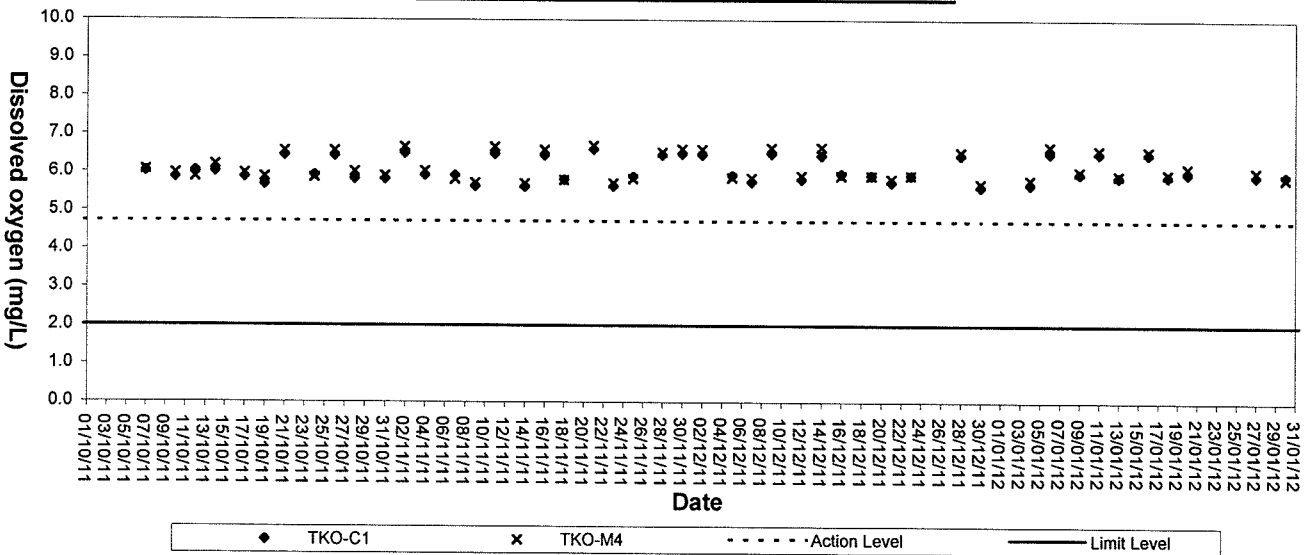




### Dissolved Oxygen (Bottom) at Mid-Flood Tide

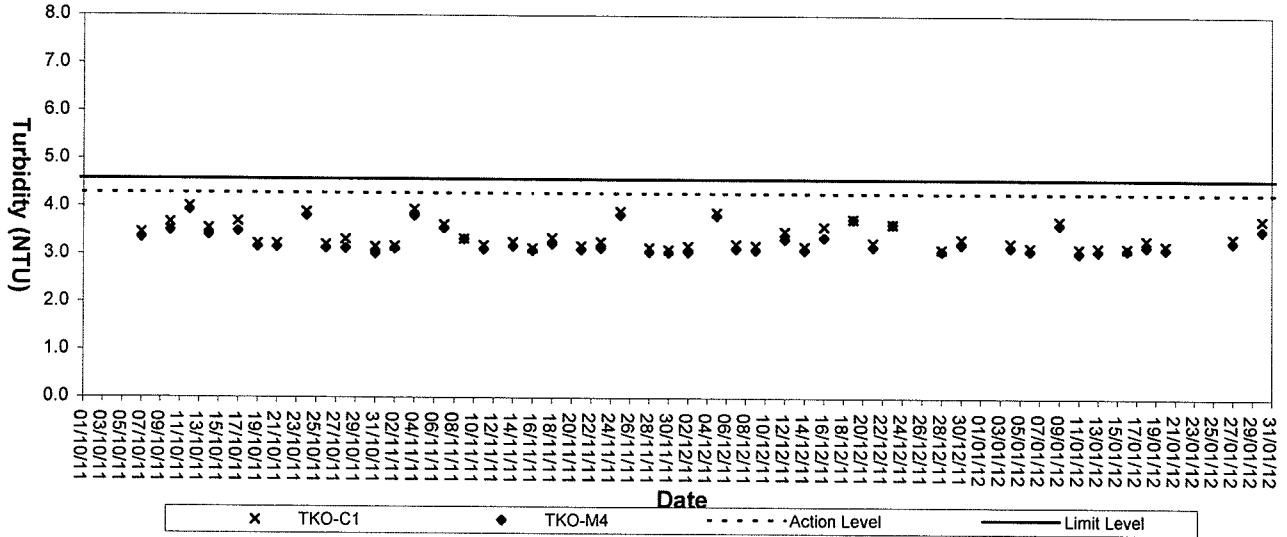


### Dissolved Oxygen (Bottom) at Mid-Ebb Tide

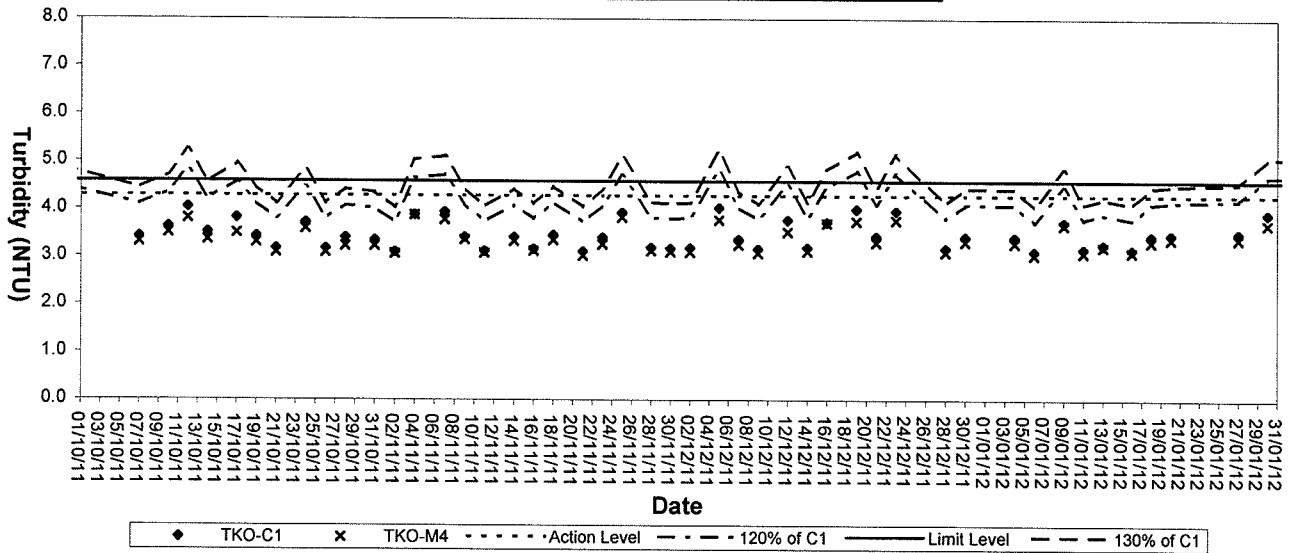




### Turbidity (Depth-average) at Mid-Flood Tide

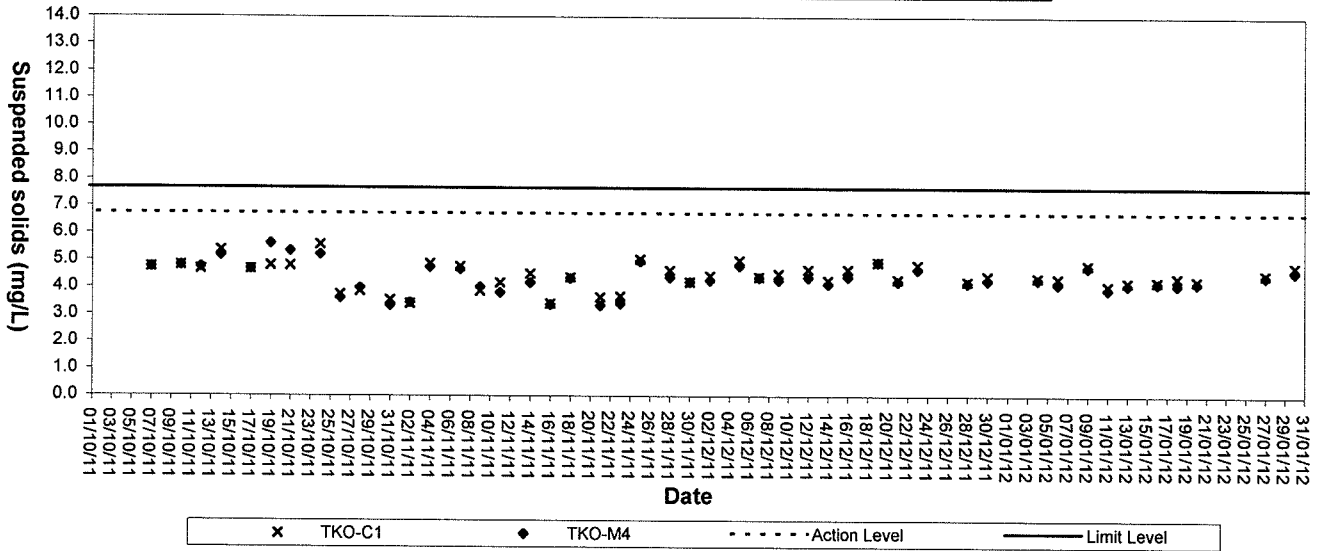


### Turbidity (Depth-average) at Mid-Ebb Tide

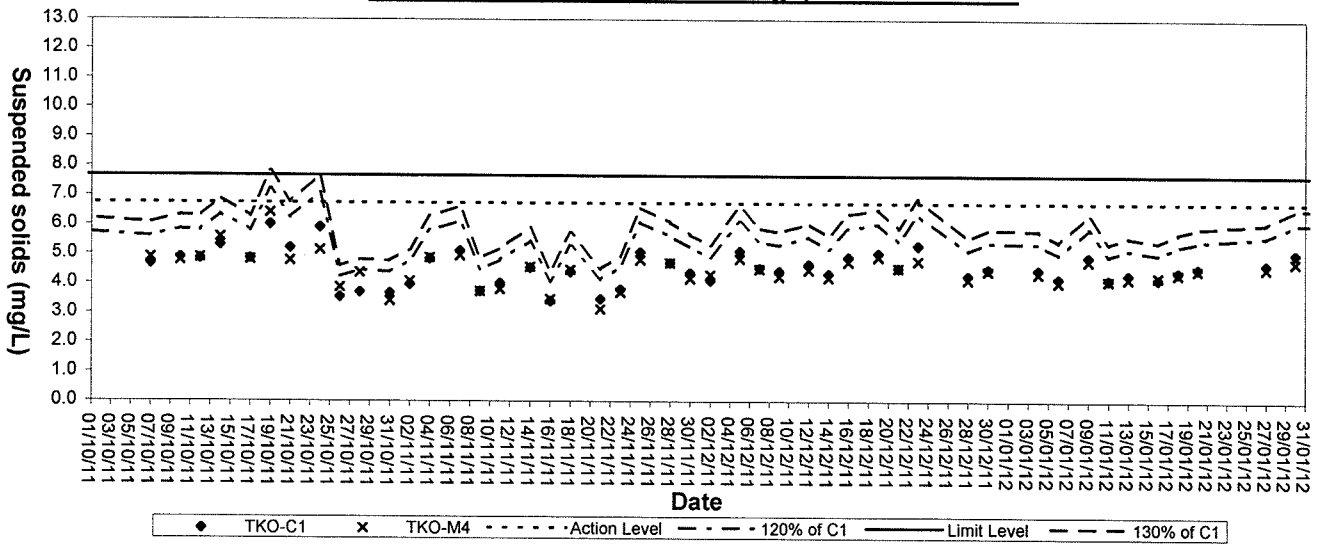




### Suspended solids (Depth-average) at Mid-Flood Tide



### Suspended Solids (Depth-average) at Mid-Ebb Tide



## **Appendix E**

### **Weather Condition**

Extract of Meteorological Observations for Tseung Kwan O Automatic Weather Station, January 2012

Date	Mean Pressure at M.S.L. (hPa)	Air Temperature			Mean Dew Point Temperature (deg C)	Relative Humidity		
		Max. (deg C)	Mean (deg C)	Min. (deg C)		Max. (%)	Mean (%)	Min. (%)
Jan 1	*****	21.7	16.8	12.6	11.6	92	73	47
Jan 2	*****	19.1	16.2	14.7	11.1	80	72	55
Jan 3	*****	19.8	16.2	14.6	11.2	89	73	54
Jan 4	*****	14.8	12.1	10.5	5.3	75	63	53
Jan 5	*****	10.9	9.7	8.7	5.9	93	78	66
Jan 6	*****	15.3	12.5	9.9	9.6	95	83	69
Jan 7	*****	14.8	13.3	11.8	9.8	88	79	73
Jan 8	*****	20.3	15.1	12.6	10.8	88	77	54
Jan 9	*****	21.0	14.9	10.7	10.8	95	78	51
Jan 10	*****	19.1	13.8#	10.6	10.9#	97	84#	57
Jan 11	*****	18.4	15.1	13.6	10.1	86	73	57
Jan 12	*****	16.4	14.2	12.0	10.8	94	80	67
Jan 13	*****	17.1	15.0	13.5	13.1	98	89	74
Jan 14	*****	18.5	16.6	15.0	15.4	98	93	81
Jan 15	*****	17.2	16.3	15.2	16.1	100	99	97
Jan 16	*****	18.0	15.1	12.3	13.8	100	92	73
Jan 17	*****	19.3	15.5	13.3	11.7	95	79	56
Jan 18	*****	19.9	17.1	14.8	14.2	94	83	65
Jan 19	*****	23.4	18.5#	16.5	16.7#	99	90#	65
Jan 20	*****	18.1	16.2	15.3	14.1	98	88	77
Jan 21	*****	15.7	15.1	14.6	13.6	98	91	83
Jan 22	*****	15.3	12.0	9.3	9.6	97	86	78
Jan 23	*****	10.2	9.3	7.8	6.8	94	84	76
Jan 24	*****	11.5	9.8	7.7	8.4	96	91	86
Jan 25	*****	8.8	7.8	6.5	6.2	95	90	81
Jan 26	*****	13.0	10.3	7.7	8.9	97	91	84
Jan 27	*****	15.2	14.1	12.8	12.7	95	91	86
Jan 28	*****	21.8	16.4	14.0	13.9	98	86	60
Jan 29	*****	18.1	15.1	12.4	13.2	100	89	70
Jan 30	*****	19.8	15.0	12.2	9.8	97	72	50
Jan 31	*****	19.4	14.0	11.0	7.5	94	67	44
<b>Mean</b>	*****	17.2	14.2#	12.1	11.1#	94	83#	67
<b>Maximum</b>	*****	23.4	18.5#	16.5	16.7#	100	99#	97
<b>Minimum</b>	*****	8.8	7.8#	6.5	5.3#	75	63#	44

## Extract of Meteorological Observations for Tseung Kwan O Automatic Weather Station, January 2012

Date	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
Jan 1	0.0	100	5.1
Jan 2	0.0	070	5.9
Jan 3	0.0	020	6.7
Jan 4	0.0	060	8.8
Jan 5	0.0	060	6.2
Jan 6	0.5	070	5.4
Jan 7	0.0	070	4.4
Jan 8	0.0	080	4.5
Jan 9	0.0	090	3.5
Jan 10	0.0	080#	3.8#
Jan 11	0.5	340	6.1
Jan 12	1.0	060	5.8
Jan 13	1.5	030	4.3
Jan 14	0.5	010	3.5
Jan 15	17.0	080	2.5
Jan 16	9.0	350	4.0
Jan 17	0.0	040	6.9
Jan 18	0.0	070	5.7
Jan 19	0.0#	070#	3.6#
Jan 20	0.0	020	8.1
Jan 21	0.5	010	6.3
Jan 22	0.0	060	6.3
Jan 23	2.0	060	6.8
Jan 24	4.0	340	6.7
Jan 25	2.5	070	5.5
Jan 26	0.5	010	7.4
Jan 27	0.0	020	4.0
Jan 28	0.0	070	4.3
Jan 29	0.0	070	4.4
Jan 30	0.0	060	6.0
Jan 31	0.0	***	6.1
<b>Mean</b>	-----	070#	5.4#
<b>Total</b>	39.5#	---	-----
<b>Maximum</b>	17.0#	---	8.8#
<b>Minimum</b>	0.0#	---	2.5#

\*\*\* unavailable

# missing (less than 24 hourly observations a day)

Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected



## **Appendix F**

### **Event-Action Plans**

## EVENT/ACTION PLAN FOR AIR QUALITY EXCEEDANCE

### ACTION

	ET Leader	IC(E)	ER	Contractor
	<b>ACTION LEVEL</b>			
1. Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Identify source, investigate the causes of exceedance and propose remedial measures</li> <li>2. Inform ER, IC(E) and Contractor</li> <li>3. Repeat measurement to confirm finding</li> <li>4. Increase monitoring frequency to daily</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by the ET</li> <li>2. Check contractor's working method</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor</li> </ol>	<ol style="list-style-type: none"> <li>1. Rectify any unacceptable practise</li> <li>2. Amend working methods if appropriate</li> </ol>
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Identify source, investigate the causes of exceedance and propose remedial measures</li> <li>2. Inform IC(E) and Contractor</li> <li>3. Repeat measurements to confirm finding</li> <li>4. Increase monitoring frequency to daily</li> <li>5. Discuss with IC(E) and Contractor on remedial actions</li> <li>6. If exceedance continues, arrange meeting with IC(E) and ER.</li> <li>7. If exceedance stops, cease additional monitoring</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by the ET Leader</li> <li>2. Check the Contractor's working method</li> <li>3. Discuss with ET and Contractor on possible remedial measures</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures</li> <li>5. Supervise implementation of remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing</li> <li>2. Notify the Contractor</li> <li>3. Ensure remedial measures properly implemented</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit proposals for remedial actions to IC(E) within 3 working days of notification</li> <li>2. Implement the agreed proposals</li> <li>3. Amend proposal if appropriate</li> </ol>
	<b>LIMIT LEVEL</b>			
1. Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Identify source, investigate the causes of exceedance and propose remedial measures</li> <li>2. Inform ER, Contractor and EPD</li> <li>3. Repeat measurement to confirm finding</li> <li>4. Increase monitoring frequency to daily</li> <li>5. Assess the effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by the ET Leader</li> <li>2. Check Contractor's working method</li> <li>3. Discuss with ET and Contractor on possible remedial measures</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures</li> <li>5. Supervise implementation of remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing</li> <li>2. Notify the Contractor</li> <li>3. Ensure remedial measures properly implemented</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance</li> <li>2. Submit proposals for remedial actions to IC(E) within 3 working days of notification</li> <li>3. Implement the agreed proposals</li> <li>4. Amend proposal if appropriate.</li> </ol>

## EVENT/ACTION PLAN FOR AIR QUALITY EXCEEDANCE

EVENT	ACTION			
	ET Leader	IC(E)	ER	Contractor
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Identify source, investigate the causes of exceedance and propose remedial measures</li> <li>2. Notify IC(E), ER, EPD and Contractor</li> <li>3. Repeat measurement to confirm finding</li> <li>4. Increase monitoring frequency to daily</li> <li>5. Carry out analysis of contractor's working procedures to determine possible mitigation to be implemented</li> <li>6. Arrange meeting with IC(E) and ER to discuss the remedial actions to be taken</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results</li> <li>8. If exceedance stops, cease additional monitoring</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET and Contractor on the potential remedial actions</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly</li> <li>3. Supervise the implementation of remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing</li> <li>2. Notify Contractor</li> <li>3. In consultation with the IC(E), agree with the Contractor on the remedial measures to be implemented</li> <li>4. Ensure remedial measures are properly implemented</li> <li>5. If exceedances continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedances</li> <li>2. Submit proposals for remedial actions to IC(E) within 3 working days of notification</li> <li>3. Implement the agreed proposals</li> <li>4. Resubmit proposals if problem still not under control</li> <li>5. Stop the relevant activity of works as determined by the ER until the exceedance is abated</li> </ol>

## EVENT/ACTION PLAN FOR NOISE EXCEEDANCE

EVENT	ACTION			
	ET Leader	IC(E)	ER	Contractor
Action Level	<ol style="list-style-type: none"> <li>1. Notify the IC(E) and the Contractor.</li> <li>2. Carry out investigation.</li> <li>3. Report the results of investigation to the IC(E) and the Contractor.</li> <li>4. Discuss with the Contractor and formulate remedial measures.</li> <li>5. Increase monitoring frequency to check mitigation effectiveness</li> </ol>	<ol style="list-style-type: none"> <li>1. Review the analysed results submitted by the ET.</li> <li>2. Review the proposed remedial measures by the Contractor and advise the ER accordingly.</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing.</li> <li>2. Notify the Contractor.</li> <li>3. Require the Contractor to propose remedial measures for the analysed noise problem.</li> <li>4. Ensure remedial measures are properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit noise mitigation proposals to IC(E).</li> <li>2. Implement noise mitigation proposals.</li> </ol>
Limit Level	<ol style="list-style-type: none"> <li>1. Notify the IC(E), the ER, the EPD and the Contractor.</li> <li>2. Identify source.</li> <li>3. Repeat measurement to confirm findings.</li> <li>4. Increase monitoring frequency.</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented.</li> <li>6. Inform the IC(E), the ER and the EPD the causes &amp; actions taken for the exceedances.</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep the IC(E), the EPD and the ER informed of the results</li> <li>8. If exceedance due to the construction works stops, cease additional monitoring</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst the ER, the ET Leader and the Contractor on the potential remedial actions.</li> <li>2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing.</li> <li>2. Notify the Contractor.</li> <li>3. Require the Contractor to propose remedial measures for the analysed noise problem.</li> <li>4. Ensure remedial measures are properly implemented.</li> <li>5. If exceedances continue, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedances is abated.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance</li> <li>2. Submit proposals for remedial actions to IC(E) within 3 working days of notification.</li> <li>3. Implement the agreed proposals.</li> <li>4. Resubmit proposals if problem still not under control.</li> <li>5. Stop the relevant activity of works as determined by the ER until the exceedances is abated.</li> </ol>

## EVENT AND ACTION PLAN FOR WATER QUALITY EXCEEDANCE

Event	ACTION			
	ET Leader	Contractor	ER	IEC
Action level exceeded by one sampling day	<ol style="list-style-type: none"> <li>1. Identify source(s) of impact;</li> <li>2. Repeat in-situ measurement to confirm findings;</li> <li>3. Notify Contractor in writing within 24 hours of identification of the exceedance</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>5. Carry out investigation</li> <li>6. Report the results of investigation to the Contractor within 3 working days of identification of exceedance and advise contractor if exceedance is due to contractor's construction works</li> <li>7. Discuss mitigation measures with Contractor if exceedance is due to the construction works within 4 working days</li> <li>8. Repeat measurement on next day of exceedance if exceedance is due to the construction works</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify the ER and IEC in writing within 24 hours of identification of exceedance</li> <li>2. Rectify unacceptable practice;</li> <li>3. Check all plant and equipment;</li> <li>4. Submit investigation report to IEC and ER within 3 working days of the identification of an exceedance</li> <li>5. Consider changes of working method if exceedance is due to the construction works</li> <li>6. Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER if exceedance is due to the construction works within 4 working days of identification of an exceedance</li> <li>7. Implement the agreed mitigation measures within reasonable time scale</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify EPD and other relevant governmental agencies in writing within 24 hours of the identification of the exceedance</li> <li>2. Discuss with IEC, ET and Contractor on the proposed mitigation measures;</li> <li>3. Require contractor to propose remedial measures for the analysed problem if related to the construction works</li> <li>4. Ensure remedial measures are properly implemented</li> <li>5. Assess the effectiveness of the mitigation measure</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET</li> <li>2. Confirm ET assessment if exceedance is due / not due to the works</li> <li>3. Discuss with ET, ER and Contractor on the mitigation measures</li> <li>4. Review contractor's mitigation measures whenever necessary to ensure their effectiveness and advise the ER accordingly</li> <li>5. Supervise the implementation of mitigation measures</li> </ol>

## EVENT AND ACTION PLAN FOR WATER QUALITY

Event	ACTION		
	ET Leader	Contractor	ER
<p>Action level being exceeded by more than one consecutive sampling days</p>	<ol style="list-style-type: none"> <li>1. Identify source(s) of impact;</li> <li>2. Repeat in-situ measurement to confirm findings</li> <li>3. Notify Contractor in writing within 24 hours of identification</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>5. Carry out investigation</li> <li>6. Report the results of investigation to the Contractor within 3 working days of identification of exceedance and advise contractor if exceedance is due to contractor's construction works</li> <li>7. Discuss mitigation measures with IEC and Contractor within 4 working of identification of an exceedance</li> <li>8. Ensure mitigation measures are implemented;</li> <li>9. Prepare to increase the monitoring frequency to daily;</li> <li>10. Repeat measurement on next day of exceedance.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify IEC and ER in writing within 24 hours of identification of exceedance</li> <li>2. Rectify unacceptable practice;</li> <li>3. Check all plant and equipment;</li> <li>4. Consider changes of working methods;</li> <li>5. Submit the results of the investigation to IEC and ER within 3 working days of the identification of an exceedance</li> <li>6. Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 4 working days of identification of an exceedance</li> <li>7. Implement the agreed mitigation measures within reasonable time scale</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify EPD and other relevant governmental agencies in writing within 24 hours of the identification of the exceedance</li> <li>2. Discuss with IEC, ET and Contractor on the proposed mitigation measures;</li> <li>3. Require contractor to propose remedial measures for the analysed problem if related to the construction works</li> <li>4. Ensure remedial measures are properly implemented</li> <li>5. Assess the effectiveness of the mitigation measure</li> </ol>
			<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET</li> <li>2. Confirm ET assessment if exceedance is due / not due to the works</li> <li>3. Discuss with ET, ER and Contractor on the mitigation measures.</li> <li>4. Review contractor's mitigation measures whenever necessary to ensure their effectiveness and advise the ER accordingly</li> <li>5. Assess the effectiveness of the implemented mitigation measures.</li> </ol>

## EVENT AND ACTION PLAN FOR WATER QUALITY EXCEEDANCE

Event	ACTION		
	ET Leader	Contractor	ER IEC
Limit level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>1. Repeat in-situ measurement to confirm findings;</li> <li>2. Identify source(s) of impact;</li> <li>3. Notify Contractor in writing within 24 hours of identification of the exceedance</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>5. Carry out investigation</li> <li>6. Report the results of investigation to the Contractor within 3 working days of identification of exceedance and advise contractor if exceedance is due to contractor's construction works</li> <li>7. Discuss mitigation measures with IEC, ER and Contractor within 4 working of identification of an exceedance</li> <li>8. Ensure mitigation measures are implemented;</li> <li>9. Increase the monitoring frequency to daily until no exceedance of Limit Level.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify IEC and ER in writing; within 24 hours of the identification of the exceedance</li> <li>2. Rectify unacceptable practice;</li> <li>3. Check all plant and equipment;</li> <li>4. Consider changes of working methods;</li> <li>5. Submit the results of the investigation to IEC and ER within 3 working days of the identification of an exceedance</li> <li>6. Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 4 working days of the identification of an exceedance</li> <li>7. Implement the agreed mitigation measures within reasonable time scale</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify EPD and other relevant governmental agencies in writing within 24 hours of identification of exceedance</li> <li>2. Discuss with IEC, ET and Contractor on the proposed mitigation measures;</li> <li>3. Request Contractor to critically review the working methods;</li> <li>4. Ensure remedial measures are properly implemented</li> <li>5. Assess the effectiveness of the implemented mitigation measures.</li> </ol>
			<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET</li> <li>2. Confirm ET assessment if exceedance is due / not due to the works</li> <li>3. Discuss with ET, ER and Contractor on the mitigation measures.</li> <li>4. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly.</li> <li>5. Assess the effectiveness of the implemented mitigation measures</li> </ol>

## EVENT AND ACTION PLAN FOR WATER QUALITY EXCEEDANCE

Event	ACTION		
	ET Leader	Contractor	ER IEC
Limit Level being exceeded by more than one consecutive sampling days	<ol style="list-style-type: none"> <li>1. Repeat in-situ measurement to confirm findings;</li> <li>2. Identify source(s) of impact;</li> <li>3. Notify Contractor in writing within 24 hours of identification of the exceedance</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>5. Carry out investigation</li> <li>6. Report the results of investigation to the Contractor within 3 working days of identification of exceedance and advise contractor if exceedance is due to contractor's construction works</li> <li>7. Discuss mitigation measures with IEC, ER and Contractor;</li> <li>8. Ensure mitigation measures are implemented;</li> <li>9. Increase the monitoring frequency to daily until no exceedance of Limit Level for two consecutive days.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify ER and IEC in writing within 24 hours of the identification of the exceedance and Rectify unacceptable practice;</li> <li>2. Check all plant and equipment;</li> <li>3. Consider changes of working methods;</li> <li>8. Submit the results of the investigation to IEC and ER within 3 working days of the identification of an exceedance</li> <li>5. Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 4 working days;</li> <li>6. Implement the agreed mitigation measures within reasonable time scale</li> <li>7. As directed by the Engineer, to slow down or to stop all or part of the marine work or construction activities.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify EPD and other relevant governmental agencies in writing within 24 hours of identification of exceedance</li> <li>2. Discuss with IEC, ET and Contractor on the proposed mitigation measures;</li> <li>3. Request Contractor to critically review the working methods;</li> <li>6. Ensure remedial measures are properly implemented</li> <li>4. Assess the effectiveness of the implemented mitigation measures;</li> <li>5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit Level.</li> </ol>
			<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET</li> <li>2. Confirm ET assessment if exceedance is due / not due to the works</li> <li>3. Discuss with ER, ET and Contractor on the mitigation measures.</li> <li>4. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly.</li> <li>5. Assess the effectiveness of the implemented mitigation measures.</li> </ol>



## **Appendix G**

### **Works Programme**

Master Programme of Contract No. CV/2009/02 - Handling of Surplus Public Fill

Site Location : Tseung Kwan O Area 137 Fill Bank

ID	Activity	Original Duration	Start	Finish
S101000	Taking Over the Existing Facilities	0	19/01/2010	
S102000	Operation	1096	19/01/2010	18/01/2013
S103000	Operation and Maintenance of Tipping Halls	1096	19/01/2010	18/01/2013
S104000	Provision and Operation of a Crushing Plant	1096	19/01/2010	18/01/2013
S105000	Handing Over the Facilities to the Employer	0		18/01/2013
A101000	Removal of Stockpile Area A3	100	19/01/2010	28/04/2010
A102000	Site Formation	7	22/04/2010	28/04/2010
A103000	Provision of New Combined Reception and Exit Offices	90	29/04/2010	27/07/2010
A104000	Provision of Inspection Platform	60	28/07/2010	25/09/2010
A105000	Provision of Measurement Systems	60	28/07/2010	25/09/2010
A106000	Provision of Surveillance Systems	60	28/07/2010	25/09/2010
A107000	Provision of Wheel Washing Facilities	60	28/07/2010	25/09/2010
A109000	Testing, Commissioning & Handover	21	14/09/2010	10/04/2010
A109100	Removal of Existing Combined Reception & Exit Offices & other Facilities A3	14	10/05/2010	18/10/2010
A109200	Removal of Existing Combined Reception & Exit Offices & other Facilities A6	14	10/05/2010	18/10/2010
A201000	Removal of Stockpile Area at Portion A6	316	19/01/2010	30/11/2010
A209100	Construction of Access Road at Portion A6	60	20/10/2010	18/12/2010
A209200	Construction of Access Road at Portion A3	61	19/10/2010	18/12/2010



東業德勤測試顧問有限公司  
ETS-TESTCONSULT LIMITED

## **Appendix H**

### **IEC's Site Audit Records**

Ref.: CEDPFRSFEM00\_0\_0894L.12

6 January 2012

By E-mail and Post

Civil Engineering and Development Department  
Fill Management Division  
5/F, Civil Engineering and Development Building  
101 Princess Margaret Road  
Kowloon, Hong Kong

Attention: Mr. W.K. Wong, Thomas

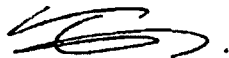
Dear Mr. Wong,

**Re: Contract No. CV/2009/02  
Handling of Surplus Public Fill  
IEC Site Inspection at TKO Area 137, Tuen Mun Area 38 and Chai Wan PFBP**

Further to the IEC Environmental Site Inspection with the representatives of CEDD, ET and the Contractor carried out at TKO Area 137 on 4 January 2012, Tuen Mun Area 38 on 5 January 2012 and Chai Wan PFBP on 6 January 2012, please find attached a copy of the completed checklists (Ref No.: CEDPFRSFEM00\_120104\_TKOFB), (Ref No.: CEDPFRSFEM00\_120105\_TMFB) and (Ref No.: CEDPFRSFEM00\_120106\_CWPFBP) for your reference.

Thank you very much for your attention and please do not hesitate to contact our Jason Lai or the undersigned should you have any queries.

Yours faithfully,



Tony Cheng  
Independent Environmental Checker

c.c.	CEDD Site Office (TKO)	Attn: Mr. C Y Wong	By email
	CEDD Site Office (TM)	Attn: Mr. C T Chan	By email
	CEDD Site Office (CW)	Attn: Mr. F.X. DA Costa	By email
	CHCSJV	Attn: Mr. Dennis Tang	By email
	ETS	Attn: Mr. C L Lau / Ms. Linda Law	By email

Q:\Projects\CEDPFRSFEM00\Corr\CEDPFRSFEM00\_0\_0894L.12.doc

Project: Contract No.: CV/2009/02  
 Handling of Surplus Public Fill

Inspection Date: 4 January 2012

Time: 10:00

Location: TKO Area 137

Checklist No. CEDPFRSFEM00\_120104\_TKOFB

Inspected by CEDD: CK WOO

IEC: JASON LAM

ET: KW MAK

Contractor: JACK CHAN

**PART A: GENERAL INFORMATION**

Weather:  Sunny  Fine  Cloudy  Rainy

Temperature: 12 °C

Humidity:  High  Moderate  Low

Wind:  Strong  Breeze  Light  Calm

**PART B: SITE AUDIT**

**Section 1: Water Quality**

	Not Obs.	Yes	No	Follow up	N/A	Photo/Remarks
1.01 Is an effluent discharge license obtained for the Project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.02 Is the effluent discharged in accordance with the discharge licence?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.03 Is the discharge of turbid water avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.04 Are temporary intercepting drains provided at the stockpiling area to divert polluted stormwater to the intercepting channels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.05 Are all catchpits, sand and silt removal facilities, and the drainage and intercepting channels on site properly maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.06 Is the stormwater intercepting system effective to collect of runoff and remove suspended solids before discharge?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.07 Is water retained in receptacles and standing water avoided to prevent mosquito breeding?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.08 Is the material properly covered to prevent washed away especially before rainstorm?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.09 Is the temporary slope surface covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD when rainstorm is imminent or forecast?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.10 Is the final slope surface treated by compaction, followed by hydroseeding or other suitable surface stabiliser approved by CEDD to prevent washing away of stockpiled material?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.11 Is a wheel washing bay with high pressure water jets provided at the site exit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.12 Is sand and silt settled out or removed before being discharged into storm drains?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.13 Are the manholes covered and sealed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.14 Is sewage from toilets discharged in to a foul sewer, or chemical toilets provided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.15 Is sewage from chemical toilets collected by a licensed contractor for disposal and maintenance of these facilities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.16 Are tipping halls enclosed with top and 3-sides to prevent spillage of material into marine water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Fu(1) + Fu(2)
1.17 Is silt curtain provided at the outward side at the TKO basin near the barging point?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	obs (2); p8
1.18 Is a waste collection vessel deployed to remove floating debris?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.19 Is foam, oil, grease, scum, litter or other objectionable matters avoided on the water in vicinity of the barging facilities during the work activities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.20 Are the barges in right size such that adequate clearance is maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller washing?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

	Not Obs.	Yes	No	Follow up	N/A	Photo/Remarks
1.21	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.22	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.23	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.24	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.25	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.26	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.27	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.28	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.29	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>Section 2: Air Quality</b>						
2.01	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.02	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.04	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.05	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.06	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.07	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.08	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.09	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.10	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.11	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.12	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.13	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.14	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.15	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.16	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.17	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.18	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.19	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.20	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

	Not Obs.	Yes	No	Follow up	N/A	Photo/Remarks
2.21	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.22	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 3: Noise</b>						
3.01	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.02	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.04	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.05	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.06	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.07	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.08	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.09	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.10	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 4: Waste/Chemical Management</b>						
4.01	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.02	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.04	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.05	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.06	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.07	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.08	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.09	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.10	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.11	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.12	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.13	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

	Not Obs.	Yes	No	Follow up	N/A	Photo/Remarks
4.14	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.15	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.16	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.17	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.18	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.19	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.20	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.21	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.22	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.23	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.24	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.25	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.26	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.27	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.28	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.29	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.30	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.31	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.32	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.33	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 5: Landscape &amp; Visual</b>						
5.01	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.02	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.03	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.04	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.05	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



Not Obs.	Yes	No	Follow up	N/A	Photo/Remarks
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**Section 6: Others**

6.01	Is the fill bank site restricted access by the general public?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6.02	Is environmental permit displaced conspicuously on site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	obs ①, p7

**Section 7: Follow-up for the Previous Environmental Inspection on date** 21.12.11 (Ref No. CEDPFRSFEM00\_111221\_TKOFB)

Is the situation in item <u>Fu①</u> improved / rectified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Follow up: p2
Is the situation in item <u>Fu②</u> improved / rectified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Follow up: p4
Is the situation in item <u>Fu③</u> improved / rectified?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	closed; p6
Is the situation in item _____ improved / rectified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the situation in item _____ improved / rectified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**Remarks:**

Follow up =  
 Fu① & Fu② were not rectified. (follow up)  
 Fu③ had been rectified. (closed)  
 During inspection =  
 ① NO EP was displayed at site entrance/exit for public information.  
 ② Silt curtain near Tipping Hall No.1 was not provided.

Signature: CEDD's Representative	Signature: IEC Auditor	Signature: ET Auditor	Signature: Contractor's Representative
Name: C. K. Joo	Name: KC Lam	Name: Mark Kiu Wan	Name: Jack
Date: 4-1-2012	Date: 4.1.2012	Date: 4/1/12	Date: 4-1-2012

**Contract No.: CV/2009/02**

**Inspection Date: 4 January 2012**

**(1) Follow up the previous inspection**

**Checklist No.: CEDPFRSFEM00\_111221\_TKOFB**

**Before**

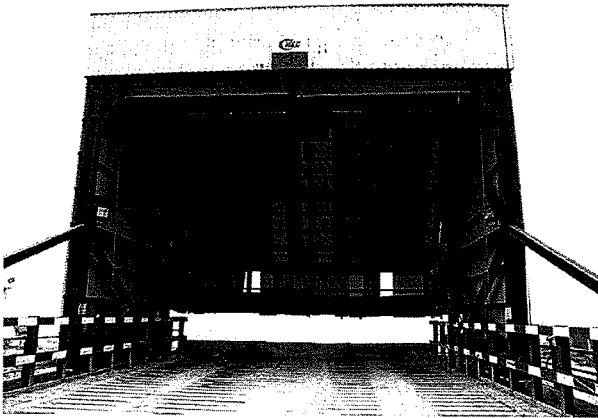


Photo 1

Tipping Hall No.3

Enclosure of Tipping Hall was damaged.

**After**

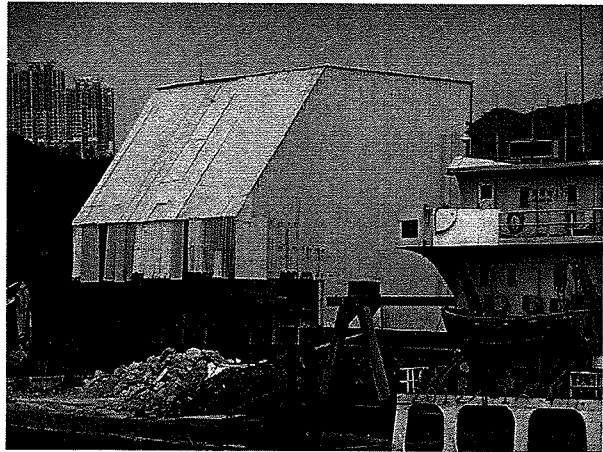


Photo 2

Tipping Hall No.3

Enclosure was still damaged. **(Follow up)**

**Before**

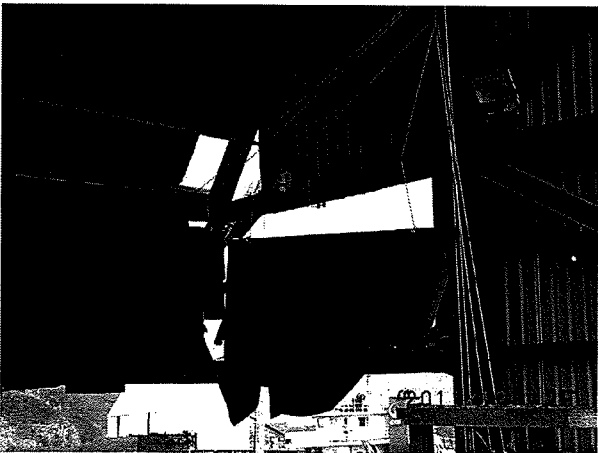


Photo 3

Tipping Hall No.2

Enclosure of Tipping Hall was damaged.

**After**



Photo 4

Tipping Hall No.2

Enclosure was still damaged. **(Follow up)**

**Photo Record**

**Before**

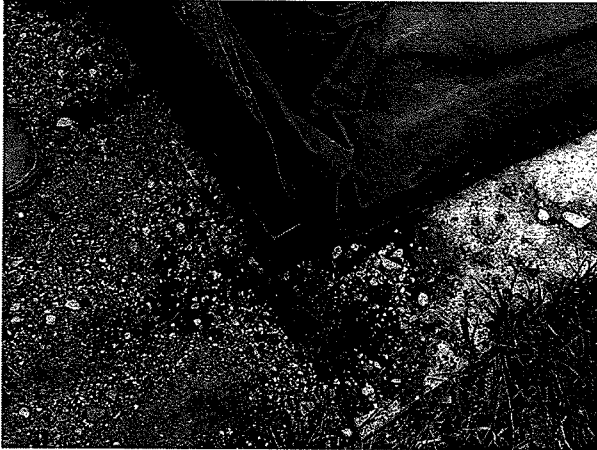


Photo 5  
Water Filling Station No.2  
Oil was leaked from drip tray.

**After**



Photo 6  
Water Filling Station No.2  
Drip tray was replaced and oil stain was removed.  
**(Closed)**

**(2) Observation during site inspection**

**Checklist No.: CEDPFRSFEM00\_120104\_TKOFB**

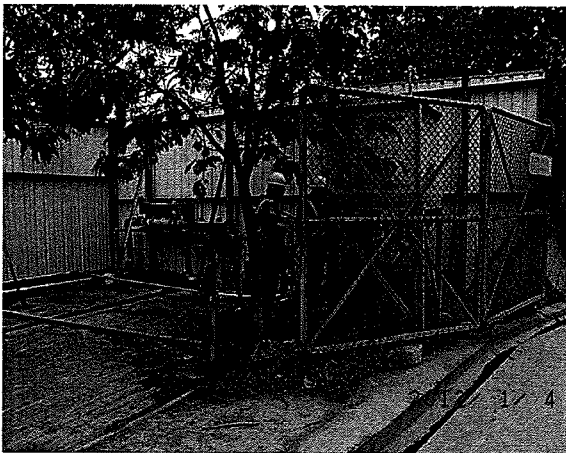


Photo 7  
Environmental Permit  
No Environmental Permit was displayed at site entrance/exit.  
The Contractor was reminded to display the updated EP for public information.

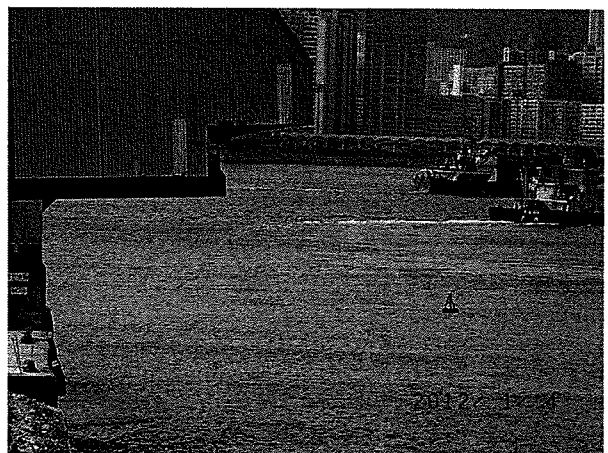


Photo 8  
Silt Curtain  
Silt curtain near Tipping Hall No.1 was not provided.  
The Contractor was reminded to provide silt curtain as soon as possible.

Ref.: CEDPFRSFEM00\_0\_0920L.12

20 January 2012

By E-mail and Post

Civil Engineering and Development Department  
Fill Management Division  
5/F, Civil Engineering and Development Building  
101 Princess Margaret Road  
Kowloon, Hong Kong

Attention: Mr. W.K. Wong, Thomas

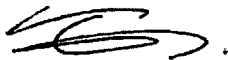
Dear Mr. Wong,

**Re: Contract No. CV/2009/02  
Handling of Surplus Public Fill  
IEC Site Inspection at TKO Area 137, Tuen Mun Area 38 and Chai Wan PFBP**

Further to the IEC Environmental Site Inspection with the representatives of CEDD, ET and the Contractor carried out at TKO Area 137 on 18 January 2012, Tuen Mun Area 38 on 19 January 2012 and Chai Wan PFBP on 20 January 2012, please find attached a copy of the completed checklists (Ref No.: CEDPFRSFEM00\_120118\_TKOFB), (Ref No.: CEDPFRSFEM00\_120119\_TMFb) and (Ref No.: CEDPFRSFEM00\_120120\_CWPFBP) for your reference.

Thank you very much for your attention and please do not hesitate to contact our Jason Lai or the undersigned should you have any queries.

Yours faithfully,



Tony Cheng  
Independent Environmental Checker

c.c.	CEDD Site Office (TKO)	Attn: Mr. C Y Wong	By email
	CEDD Site Office (TM)	Attn: Mr. C T Chan	By email
	CEDD Site Office (CW)	Attn: Mr. F.X. DA Costa	By email
	CHCSJV	Attn: Mr. Dennis Tang	By email
	ETS	Attn: Mr. C L Lau / Ms. Linda Law	By email

Q:\Projects\CEDPFRSFEM00\Corr\CEDPFRSFEM00\_0\_0920L.12.doc

**Project:** Contract No.: CV/2009/02  
 Handling of Surplus Public Fill

**Inspection**

**Date:** 18 January 2012

**Time:** 10:00

**Location:** TKO Area 137

**Checklist No.** CEDPFRSFEM00\_120118\_TKOFB

**Inspected by**

**CEDD:** CK WOO

**IEC:** JASON LAM

**ET:** KW MAK

**Contractor:** JACK CHAN

**PART A: GENERAL INFORMATION**

**Weather:**  Sunny  Fine  Cloudy  Rainy

**Temperature:** 17 °C

**Humidity:**  High  Moderate  Low

**Wind:**  Strong  Breeze  Light  Calm

**PART B: SITE AUDIT**

**Section 1: Water Quality**

	Not Obs.	Yes	No	Follow up	N/A	Photo/Remarks
1.01 Is an effluent discharge license obtained for the Project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.02 Is the effluent discharged in accordance with the discharge licence?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.03 Is the discharge of turbid water avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.04 Are temporary intercepting drains provided at the stockpiling area to divert polluted stormwater to the intercepting channels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.05 Are all catchpits, sand and silt removal facilities, and the drainage and intercepting channels on site properly maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.06 Is the stormwater intercepting system effective to collect of runoff and remove suspended solids before discharge?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.07 Is water retained in receptacles and standing water avoided to prevent mosquito breeding?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.08 Is the material properly covered to prevent washed away especially before rainstorm?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.09 Is the temporary slope surface covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD when rainstorm is imminent or forecast?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.10 Is the final slope surface treated by compaction, followed by hydroseeding or other suitable surface stabiliser approved by CEDD to prevent washing away of stockpiled material?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.11 Is a wheel washing bay with high pressure water jets provided at the site exit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.12 Is sand and silt settled out or removed before being discharged into storm drains?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.13 Are the manholes covered and sealed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.14 Is sewage from toilets discharged in to a foul sewer, or chemical toilets provided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.15 Is sewage from chemical toilets collected by a licensed contractor for disposal and maintenance of these facilities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.16 Are tipping halls enclosed with top and 3-sides to prevent spillage of material into marine water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Fu① + Fu②; p2, p4
1.17 Is silt curtain provided at the outward side at the TKO basin near the barging point?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Fu④; p8
1.18 Is a waste collection vessel deployed to remove floating debris?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.19 Is foam, oil, grease, scum, litter or other objectionable matters avoided on the water in vicinity of the barging facilities during the work activities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.20 Are the barges in right size such that adequate clearance in maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller washing?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

	Not Obs.	Yes	No	Follow up	N/A	Photo/Remarks
1.21	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.22	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.23	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.24	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.25	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.26	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.27	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.28	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.29	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	obs 0; p9
<b>Section 2: Air Quality</b>						
2.01	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.02	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.04	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.05	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.06	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.07	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.08	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.09	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.10	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.11	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.12	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.13	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.14	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.15	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.16	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.17	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.18	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.19	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.20	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

	Not Obs.	Yes	No	Follow up	N/A	Photo/Remarks
2.21	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.22	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 3: Noise</b>						
3.01	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.02	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.04	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.05	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.06	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.07	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.08	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.09	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.10	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 4: Waste/Chemical Management</b>						
4.01	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.02	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.04	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.05	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.06	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.07	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.08	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.09	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.10	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.11	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.12	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.13	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

	Not Obs.	Yes	No	Follow up	N/A	Photo/Remarks
4.14	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.15	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.16	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.17	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.18	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.19	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.20	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.21	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.22	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.23	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.24	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.25	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.26	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.27	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.28	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.29	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.30	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.31	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.32	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.33	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 5: Landscape &amp; Visual</b>						
5.01	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.02	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.03	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.04	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.05	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



Not Obs.	Yes	No	Follow up	N/A	Photo/Remarks
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**Section 6: Others**

6.01	Is the fill bank site restricted access by the general public?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6.02	Is environmental permit displaced conspicuously on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**Section 7: Follow-up for the Previous Environmental Inspection on date** 04.01.12 (Ref No. CEDPFRSFEM00\_120104\_TKOFB)

Is the situation in item <u>Fu ①</u> improved / rectified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	refer p2
Is the situation in item <u>Fu ②</u> improved / rectified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	refer p4
Is the situation in item <u>Fu ③</u> improved / rectified?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	closed; pb
Is the situation in item <u>Fu ④</u> improved / rectified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	refer p8
Is the situation in item _____ improved / rectified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

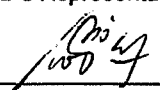
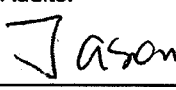


**Remarks:**

Follow up

- Fu ③ had been rectified. (closed)
- Fu ①, Fu ② & Fu ④ were outstanding. (Follow up)

During this inspection:

obs ① - Oil was leaked from generator and found accumulated in drip tray at Portion A4 (next to workshop).

Signature: CEDD's Representative	Signature: IEC Auditor	Signature: ET Auditor	Signature: Contractor's Representative
			
Name: <u>C. K. Woo</u>	Name: <u>K. C. Lam</u>	Name: <u>Mak Hei Wai</u>	Name: <u>Jack Chan</u>
Date: <u>18-1-2012</u>	Date: <u>18.1.2012</u>	Date: <u>18/1/12</u>	Date: <u>18-1-2012</u>

Contract No.: CV/2009/02

Inspection Date: 18 January 2012

(1) Follow up the previous inspection

Checklist No.: CEDPFRSFEM00\_120104\_TKOFB

Before

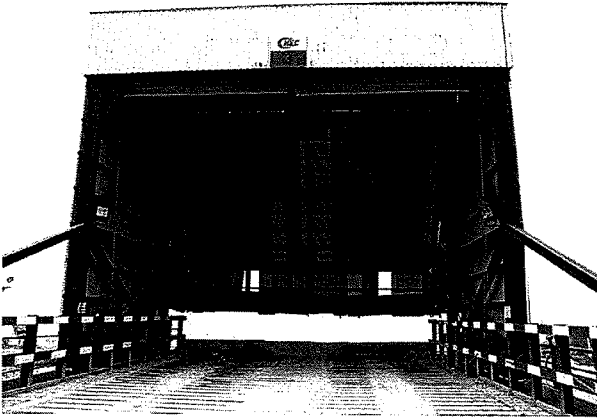


Photo 1

Tipping Hall No.3

Enclosure of Tipping Hall was damaged.

After

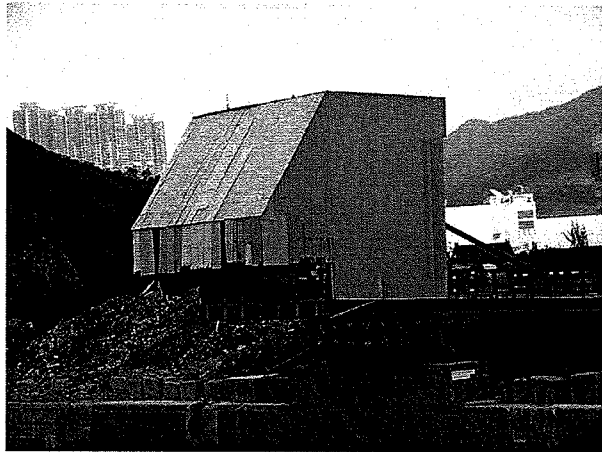


Photo 2

Tipping Hall No.3

No repairing work for tipping hall was carried out. Enclosure was still damaged. **(Follow up)**

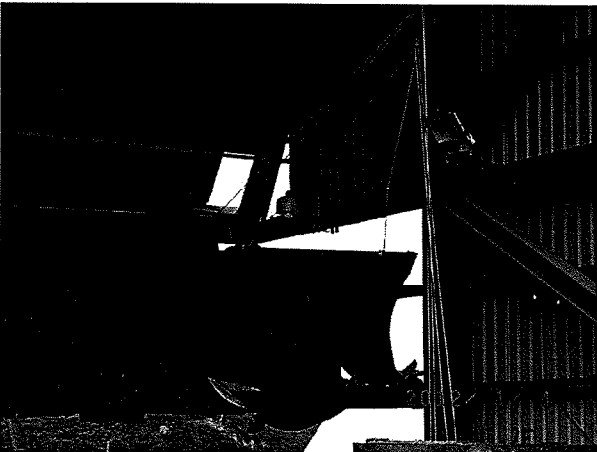


Photo 3

Tipping Hall No.2

Enclosure of Tipping Hall was damaged.

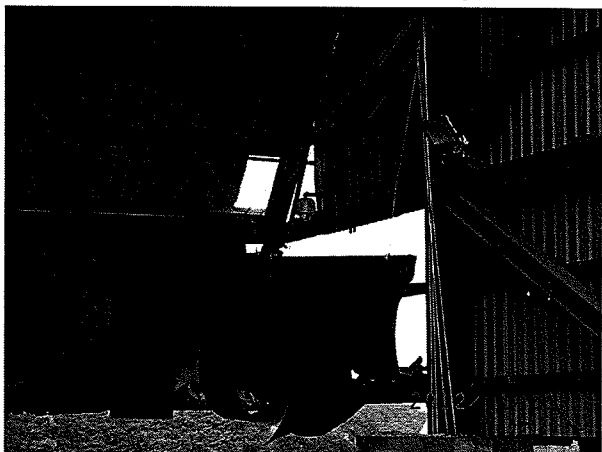


Photo 4

Tipping Hall No.2

No repairing work for tipping hall was carried out. Enclosure was still damaged. **(Follow up)**

**Before**

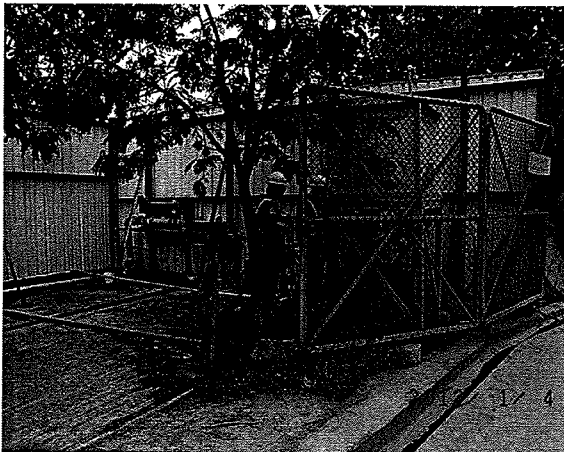


Photo 5

Environmental Permit

No Environmental Permit was displayed at site entrance/exit.

**After**

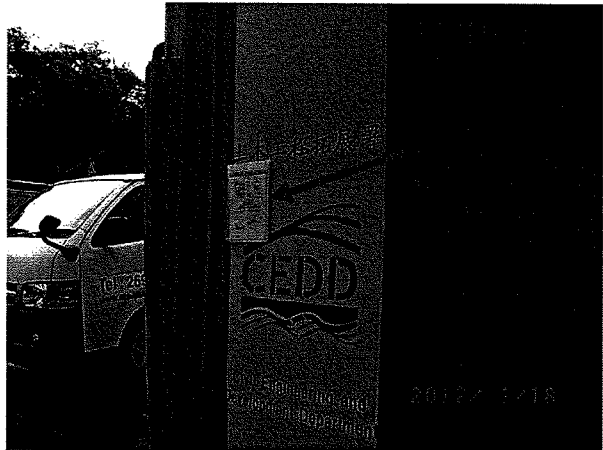


Photo 6

Environmental Permit

A copy of EP had been displayed at site exit for public information. **(Closed)**

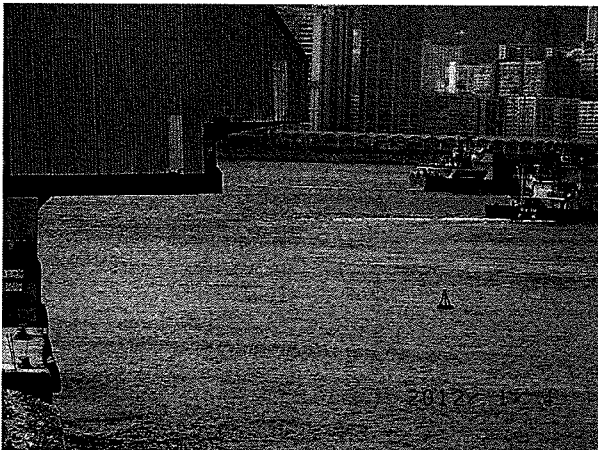


Photo 7

Silt Curtain

Silt curtain near Tipping Hall No.1 was not provided.



Photo 8

Silt Curtain

No silt curtain was provided near Tipping Hall No.1. **(Follow up)**

**(2) Observation during site inspection**

**Checklist No.: CEDPFRSFEM00\_120118\_TKOFB**



Photo 9

Portion A4 (next to Workshop)

Oil was leaked from Generator and found accumulated in drip tray.

Generator should be replaced immediately and oil should be properly removed from drip tray.



東業德勤測試顧問有限公司  
ETS-TESTCONSULT LIMITED

## **Appendix I**

### **Weekly ET's Site Inspection Record**



CEDD Contract No.: CV/2009/02  
Handling of Surplus Public Fill - Tseung Kwun O Fill Bank

Inspection Date : 4/1/12  
Time : 10:00  
Weather : Sunny / Fine / Cloudy / Overcast / Drizzle / Rain / Storm / Hazy  
Wind : Calm / Light / Breeze / Strong  
Temperature : 15°C  
Humidity : High / Moderate / Low

Inspected by	CEDD	Contractor / Sub-Contractor	ET
Signature:			
Name:	C.K. Joo G-YONG	Paul Chan	Mark Sei Wai
Title	A104/P3 Slow/P3	G.E	E.T



Environmental Checklist		Implementation Stages*		Remark
		Yes	No / N/A	
<b>Fugitive Dust Emission</b>				
▪	Dust control / mitigation measures shall be provided to prevent dust nuisance.	✓		
▪	A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading / unloading and similar activities should be allowed.	✓		
▪	Water sprays shall be provided and used to dampen materials.	✓		
▪	Regular cleaning and watering the site shall be provided to minimize the fugitive dust emissions.	✓		
▪	All vehicles shall be restrict to a maximum speed of 10 km per hour.	✓		
▪	Any vehicle with open load carrying area used for moving materials which has the potential to create dust shall have properly fitting side and tail boards. Material having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin.	✓		
▪	The designated site main haul road shall be paved or regular watering.	✓		
▪	Frequent watering of work site shall be at least three times per day.	✓		
▪	Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site.	✓		
▪	Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.	✓		
▪	All plant and equipment should be well maintained e.g. without black smoke emission.	✓		
▪	Open burning should be prohibited.	✓		
▪	The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	✓		
▪	Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shot concrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	✓		
▪	When fill material is transfer by belt conveyor systems, the conveyors shall be enclosed on top and 2 sides.	✓		
▪	The belt scraper shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt.	✓		
▪	The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the material landing point is maintained at no more than 1m.	✓		
<b>Noise Impact</b>				
▪	The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	✓		
▪	Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	✓		
▪	Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	✓		
▪	Air compressors and hand held breakers should have noise labels.	✓		
▪	Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	✓		
▪	Noisy equipment and mobile plant shall always be site away from NSRs.	✓		

Environmental Checklist		Implementation Stages*		Remark
		Yes	No / N/A	
<b>Water Quality</b>				
▪	Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.	✓		
▪	The permanent drainage channels should have sediment basin, traps and baffles and maintain properly.	✓		
▪	Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bay barriers shall be used to assist the diversion of polluted stormwater to the intercepting channels.	✓		
▪	Manholes should be covered and sealed.	✓		
▪	Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	✓		
▪	A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.	✓		
▪	A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront.	✓		
▪	The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	✓		
▪	The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	✓		
▪	Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotconcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	✓		
▪	Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	✓		
▪	A wheel washing bay shall be provided at the site exit and wash-water shall have sand and silt settled out or removed before being discharged into storm drains.	✓		
▪	The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcore to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	✓		
▪	Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided. The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	✓		
▪	Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas.	✓		
▪	Oil interceptor shall be provided at work shop.	✓		
▪	Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.	✓		Item 1 and item 2
▪	The barges shall be in right size such that adequate clearance is maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.	✓		
▪	All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.	✓		
▪	Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	✓		
▪	Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.	✓		
▪	The work activities shall not cause any visible foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging facilities.	✓		
▪	Existing silt curtain at the outward side of the basin near the Barging Handling Area throughout the period shall be repair, maintain and service when there is public fill intake by barges to the Fill Bank in accordance with PS Clause 1.68. The total length of the silt curtains shall not be less than 160m, and a gap of about 80m shall be left open for access of barges. The silt curtain shall be properly maintained such that it can also serve the function of refuse containment boom to confine floating refuse.	✓		Item 3
▪	A waste collection vessel shall be deployed to remove floating debris.	✓		

Environmental Checklist		Implementation Stages*		Remark
		Yes	No / N/A	
<b>Landscape and Visual</b>				
▪	The design of the fill bank and platform heights adopted should allow the fill bank to fit into the general topography of the surrounding land. Straight edged slopes should be avoided.	√		
▪	The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD.	√		
▪	Surface of outer slopes of the fill bank shall preferably be hydroseeded or covered with geo-textile matting of appropriate colour (e.g. dark green / brown) once completed.	√		
▪	The barging point and the C&DMSF at the fill bank shall not be in operation from 07:00 pm to 08:00 am daily to avoid potential visual impact from glare.	√		
<b>Other Environmental Factors</b>				
▪	C&D waste sorted from mixed C&D material shall be removed from the temporary buffer storage area on a daily basis and transfer to SENT landfill for disposal.	√		
▪	Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	√		
▪	Any unused materials or those with remaining functional capacity should be recycled and stored properly.	√		
▪	All generators, fuel and oil storage are within bundle areas.	√		
▪	Oil leakage from machinery, vehicle and plant is prevented.	√		
▪	The Environmental Permit should be displaced conspicuously on site.	√		
▪	Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	√		
▪	To encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the workforce.	√		




**Summary of the Weekly Site Inspection:**

Item	Details of defective works or observations	Proposed Follow Up Action	Photo Ref.	Further Action Required (Yes/No)	Target Completion Date
1	Follow up action to item 2 on 02/11/11, item 2 on 09/11/11, item 2 on 16/11/11, item 2 on 25/11/11, item 2 on 30/11/11, item 2 on 07/12/11, item 2 on 14/12/11, item 2 on 21/12/11 and item 1 on 28/12/11, enclosure of tipping hall No.3 was still found damaged.	To repair the damaged part of tipping hall properly.	120104_001	Yes	11/01/12
2	Follow up action to item 4 on 14/12/11, item 3 on 21/12/11 and item 2 on 28/12/11, enclosure of tipping hall No.2 was still found damaged.	To repair the damaged part of tipping hall properly.	120104_002	Yes	11/01/12
3	Silt curtain near Tipping hall No.1 was noted damaged.	To repair the silt curtain as soon as possible.	120104_003	Yes	11/01/12

Remark

--

Name	Title	Signature	Date
Linda Law	Senior Environmental Officer		04 January 2012

Photos



Photo 120104\_001 (Tipping hall No.3)

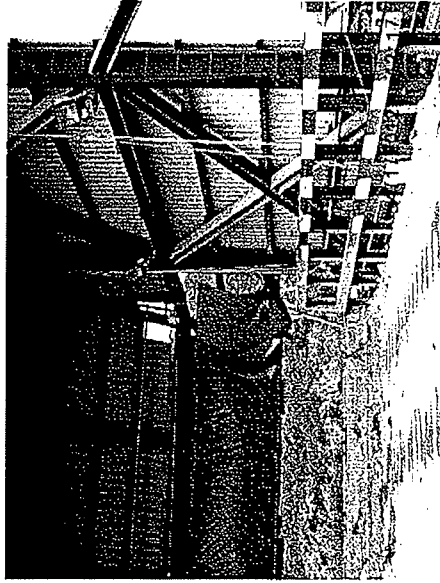


Photo 120104\_002 (Tipping hall No.2)

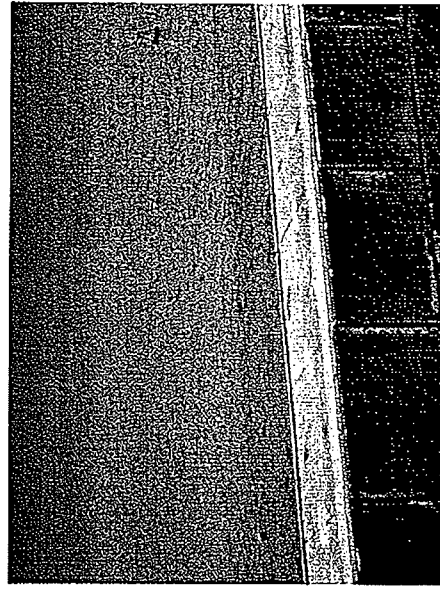


Photo 120104\_003 (Silt curtain near Tipping hall No.1)



CEDD Contract No.: CV/2009/02  
Handling of Surplus Public Fill - Tseung Kwan O Fill Bank

Inspection Date : 11/1/12  
 Time : 10:30  
 Weather : Sunny / Fine / Cloudy / Overcast / Drizzle / Rain / Storm / Hazy  
 Wind : Calm / Light / Breeze / Strong

Temperature : 17°C  
 Humidity : High / Moderate / Low

Inspected by	CEDD	Contractor / Sub-Contractor	ET
Signature:			
Name:	C. K. JOO	Jack Chan	Mark Teri Wan
Title	Area c/s	S.S.	E.T

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	N/A	
<b>Fugitive Dust Emission</b>					
▪	Dust control / mitigation measures shall be provided to prevent dust nuisance.	✓			
▪	A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading / unloading and similar activities should be allowed.	✓			
▪	Water sprays shall be provided and used to dampen materials.	✓			
▪	Regular cleaning and watering the site shall be provided to minimize the fugitive dust emissions.	✓			
▪	All vehicles shall be restrict to a maximum speed of 10 km per hour.	✓			
▪	Any vehicle with open load carrying area used for moving materials which has the potential to create dust shall have properly fitting side and tail boards. Material having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin.	✓			
▪	The designated site main haul road shall be paved or regular watering.	✓			
▪	Frequent watering of work site shall be at least three times per day.	✓			
▪	Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site.	✓			
▪	Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.	✓			
▪	All plant and equipment should be well maintained e.g. without black smoke emission.	✓			
▪	Open burning should be prohibited.	✓			
▪	The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	✓			
▪	Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shot concrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	✓			
▪	When fill material is transfer by belt conveyor systems, the conveyors shall be enclosed on top and 2 sides.	✓			
▪	The belt scraper shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt.	✓			
▪	The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the material landing point is maintained at no more than 1m.	✓			
<b>Noise Impact</b>					
▪	The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	✓			
▪	Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	✓			
▪	Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	✓			
▪	Air compressors and hand held breakers should have noise labels.	✓			
▪	Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	✓			
▪	Noisy equipment and mobile plant shall always be site away from NSRs.	✓			

Environmental Checklist		Implementation Stages*		Remark
		Yes	No	
<b>Water Quality</b>				
▪	Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.	✓		
▪	The permanent drainage channels should have sediment basin, traps and baffles and maintain properly.	✓		
▪	Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bay barriers shall be used to assist the diversion of polluted stormwater to the intercepting channels.	✓		
▪	Manholes should be covered and sealed.	✓		
▪	Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	✓		
▪	A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.	✓		
▪	A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront.	✓		
▪	The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	✓		
▪	The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	✓		
▪	Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotconcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	✓		
▪	Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	✓		
▪	A wheel washing bay shall be provided at the site exit and wash-water shall have sand and silt settled out or removed before being discharged into storm drains.	✓		
▪	The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcores to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	✓		
▪	Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided. The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	✓		
▪	Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas.	✓		
▪	Oil interceptor shall be provided at work shop.	✓		
▪	Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.	✓	Item 1 and item 2	
▪	The barges shall be in right size such that adequate clearance is maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.	✓		
▪	All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.	✓		
▪	Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	✓		
▪	Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.	✓		
▪	The work activities shall not cause any visible foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging facilities.	✓		
▪	Existing silt curtain at the outward side of the basin near the Barging Handling Area throughout the period shall be repair, maintain and service when there is public fill intake by barges to the Fill Bank in accordance with PS Clause 1.68. The total length of the silt curtains shall not be less than 160m, and a gap of about 80m shall be left open for access of barges. The silt curtain shall be properly maintained such that it can also serve the function of refuse containment boom to confine floating refuse.	✓	Item 3	
▪	A waste collection vessel shall be deployed to remove floating debris.	✓		


Environmental Checklist		Implementation Stages*			Remark
		Yes	No	N/A	
<b>Landscape and Visual</b>					
▪	The design of the fill bank and platform heights adopted should allow the fill bank to fit into the general topography of the surrounding land. Straight edged slopes should be avoided.	√			
▪	The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD.	√			
▪	Surface of outer slopes of the fill bank shall preferably be hydroseeded or covered with geo-textile matting of appropriate colour (e.g. dark green / brown) once completed.	√			
▪	The barging point and the C&DMSF at the fill bank shall not be in operation from 07:00 pm to 08:00 am daily to avoid potential visual impact from glare.	√			
<b>Other Environmental Factors</b>					
▪	C&D waste sorted from mixed C&D material shall be removed from the temporary buffer storage area on a daily basis and transfer to SENT landfill for disposal.	√			
▪	Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	√			
▪	Any unused materials or those with remaining functional capacity should be recycled and stored properly.	√			
▪	All generators, fuel and oil storage are within bundle areas.	√			
▪	Oil leakage from machinery, vehicle and plant is prevented.	√			
▪	The Environmental Permit should be displaced conspicuously on site.	√			
▪	Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	√			
▪	To encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the workforce.	√			

**Summary of the Weekly Site Inspection:**

Item	Details of defective works or observations	Proposed Follow Up Action	Photo Ref.	Further Action Required (Yes/No)	Target Completion Date
1	Follow up action to item 2 on 02/11/11, item 2 on 09/11/11, item 2 on 16/11/11, item 2 on 25/11/11, item 2 on 30/11/11, item 2 on 07/12/11, item 2 on 14/12/11, item 2 on 21/12/11, item 1 on 28/12/11 and item 1 on 04/01/12, enclosure of tipping hall No.3 was still found damaged.	To repair the damaged part of tipping hall properly.	120111_001	Yes	18/01/12
2	Follow up action to item 4 on 14/12/11, item 3 on 21/12/11, item 2 on 28/12/11 and item 2 on 04/01/12, enclosure of tipping hall No.2 was still found damaged.	To repair the damaged part of tipping hall properly.	120111_002	Yes	18/01/12
3	Follow up action to item 3 on 04/01/12, silt curtain near Tipping hall No.1 was noted damaged.	To repair the silt curtain as soon as possible.	120111_003	Yes	18/01/12

Remark

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Name	Title	Signature	Date
Linda Law	Senior Environmental Officer		11 January 2012

Photos



Photo 120111\_001 (Tipping hall No.3)

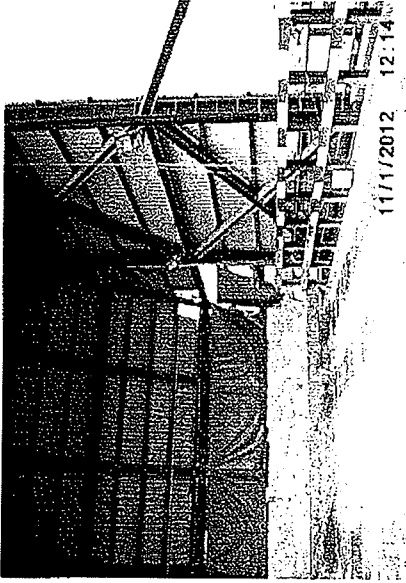


Photo 120111\_002 (Tipping hall No.2)

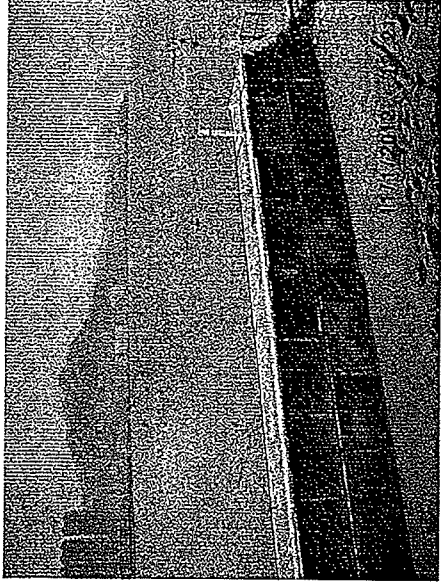




Photo 120111\_003 (Silt curtain near Tipping hall No.1)





CEDD Contract No.: CV/2009/02  
Handling of Surplus Public Fill - Tseung Kwun O Fill Bank

Inspection Date : 18/1/12  
 Time : 10:15  
 Weather : Sunny (Fine) / Cloudy / Overcast / Drizzle / Rain / Storm / Hazy  
 Wind : Calm (Light) / Breeze / Strong  
 Temperature : 19°C  
 Humidity : High / Moderate (Low)

Inspected by	CEDD	Contractor / Sub-Contractor	ET
Signature:			
Name:	C. K. Woo	Jack Chan Kwan Tam	Mark
Title	Accounts	G/E. PM	Mark Ter Wan E.T



Environmental Checklist		Implementation Stages*			Remark
		Yes	No	N/A	
<b>Fugitive Dust Emission</b>					
<input type="checkbox"/>	Dust control / mitigation measures shall be provided to prevent dust nuisance.	✓			
<input type="checkbox"/>	A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading / unloading and similar activities should be allowed.	✓			
<input type="checkbox"/>	Water sprays shall be provided and used to dampen materials.	✓			
<input type="checkbox"/>	Regular cleaning and watering the site shall be provided to minimize the fugitive dust emissions.	✓			
<input type="checkbox"/>	All vehicles shall be restricted to a maximum speed of 10 km per hour.	✓			
<input type="checkbox"/>	Any vehicle with open load carrying area used for moving materials which has the potential to create dust shall have properly fitting side and tail boards. Material having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin.	✓			
<input type="checkbox"/>	The designated site main haul road shall be paved or regular watering.	✓			
<input type="checkbox"/>	Frequent watering of work site shall be at least three times per day.	✓			
<input type="checkbox"/>	Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site.	✓			
<input type="checkbox"/>	Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.	✓			
<input type="checkbox"/>	All plant and equipment should be well maintained e.g. without black smoke emission.	✓			
<input type="checkbox"/>	Open burning should be prohibited.	✓			
<input type="checkbox"/>	The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	✓			
<input type="checkbox"/>	Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shot concrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	✓			
<input type="checkbox"/>	When fill material is transfer by belt conveyor systems, the conveyors shall be enclosed on top and 2 sides.	✓			
<input type="checkbox"/>	The belt scraper shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt.	✓			
<input type="checkbox"/>	The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the material landing point is maintained at no more than 1m.	✓			
<b>Noise Impact</b>					
<input type="checkbox"/>	The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	✓			
<input type="checkbox"/>	Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	✓			
<input type="checkbox"/>	Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	✓			
<input type="checkbox"/>	Air compressors and hand held breakers should have noise labels.	✓			
<input type="checkbox"/>	Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	✓			
<input type="checkbox"/>	Noisy equipment and mobile plant shall always be site away from NSRs.	✓			


Environmental Checklist	Implementation Stages*		Remark
	Yes	No	
	N/A		
<b>Water Quality</b>			
Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.	✓		
The permanent drainage channels should have sediment basin, traps and baffles and maintain properly.	✓		
Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bay barriers shall be used to assist the diversion of polluted stormwater to the intercepting channels.	✓		
Manholes should be covered and sealed.	✓		
Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	✓		
A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.	✓		
A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront.	✓		
The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	✓		
The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	✓		
Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	✓		
Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	✓		
A wheel washing bay shall be provided at the site exit and wash-water shall have sand and silt settled out or removed before being discharged into storm drains.	✓		
The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcores to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	✓		
Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided. The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	✓		
Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas.	✓		
Oil interceptor shall be provided at work shop.	✓		
Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.	✓		Item 1 and item 2
The barges shall be in right size such that adequate clearance is maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.	✓		
All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.	✓		
Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	✓		
Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.	✓		
The work activities shall not cause any visible foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging facilities.	✓		
Existing silt curtain at the outward side of the basin near the Barging Handling Area throughout the period shall be repair, maintain and service when there is public fill intake by barges to the Fill Bank in accordance with PS Clause 1.68. The total length of the silt curtains shall not be less than 160m, and a gap of about 80m shall be left open for access of barges. The silt curtain shall be properly maintained such that it can also serve the function of refuse containment boom to confine floating refuse.	✓		Item 3
A waste collection vessel shall be deployed to remove floating debris.	✓		

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	N/A	
<b>Landscape and Visual</b>					
	<ul style="list-style-type: none"> <li>The design of the fill bank and platform heights adopted should allow the fill bank to fit into the general topography of the surrounding land. Straight edged slopes should be avoided.</li> <li>The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD.</li> <li>Surface of outer slopes of the fill bank shall preferably be hydroseeded or covered with geo-textile matting of appropriate colour (e.g. dark green / brown) once completed.</li> <li>The barging point and the C&amp;DMSF at the fill bank shall not be in operation from 07:00 pm to 08:00 am daily to avoid potential visual impact from glare.</li> </ul>	√			
		√			
		√			
		√			
<b>Other Environmental Factors</b>					
	<ul style="list-style-type: none"> <li>C&amp;D waste sorted from mixed C&amp;D material shall be removed from the temporary buffer storage area on a daily basis and transfer to SENT landfill for disposal.</li> <li>Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.</li> <li>Any unused materials or those with remaining functional capacity should be recycled and stored properly.</li> <li>All generators, fuel and oil storage are within bundle areas.</li> <li>Oil leakage from machinery, vehicle and plant is prevented.</li> <li>The Environmental Permit should be displaced conspicuously on site.</li> <li>Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.</li> <li>To encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the workforce.</li> </ul>	√			
		√			
		√			
		√			
		√			Item 4
		√			
		√			
		√			

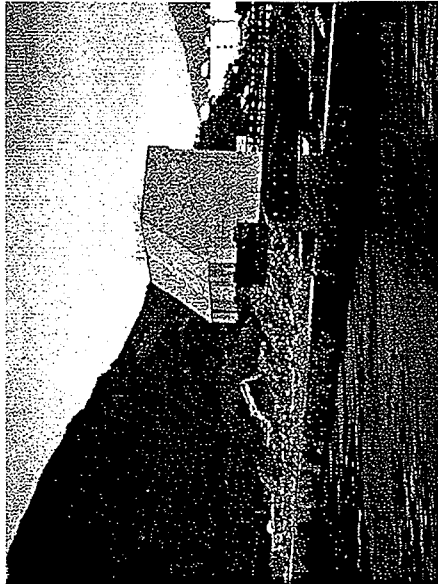
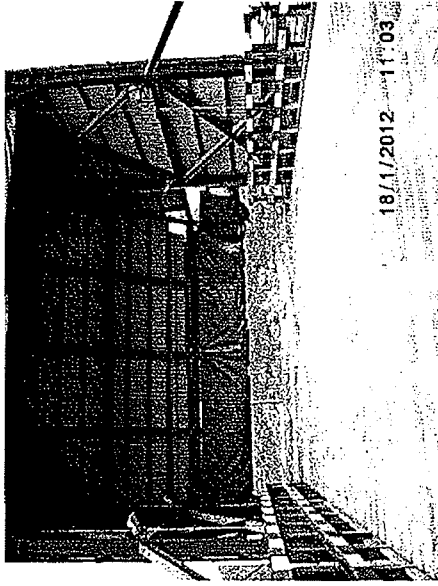
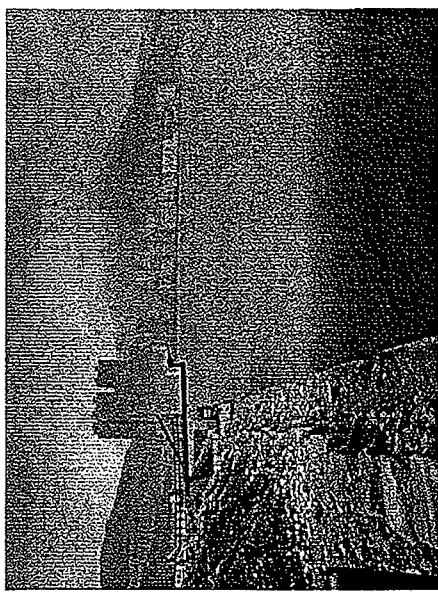

**Summary of the Weekly Site Inspection:**

Item	Details of defective works or observations	Proposed Follow Up Action	Photo Ref.	Further Action Required (Yes/No)	Target Completion Date
1	Follow up action to item 2 on 02/11/11, item 2 on 09/11/11, item 2 on 16/11/11, item 2 on 25/11/11, item 2 on 30/11/11, item 2 on 07/12/11, item 2 on 14/12/11, item 2 on 21/12/11, item 1 on 28/12/11, item 1 on 04/01/12 and item 1 on 11/01/12, enclosure of tipping hall No.3 was still found damaged.	To repair the damaged part of tipping hall properly.	120118_001	Yes	27/01/12
2	Follow up action to item 4 on 14/12/11, item 3 on 21/12/11, item 2 on 28/12/11, item 2 on 04/01/12 and item 2 on 11/01/12, enclosure of tipping hall No.2 was still found damaged.	To repair the damaged part of tipping hall properly.	120118_002	Yes	27/01/12
3	Follow up action to item 3 on 04/01/12 and item 3 on 11/01/12, silt curtain near Tipping hall No.1 was noted damaged.	To repair the silt curtain as soon as possible.	120118_003	Yes	27/01/12
4	Oil leakage was noted from a drip tray for a generator near the water truck filling station No.2.	To clean up the leak oil and contaminated material as chemical waste.	120118_004	Yes	27/01/12

Remark

	Name	Title	Signature	Date
Checked by	Linda Law	Senior Environmental Officer		18 January 2012

**Photos**

 <p>Photo 120118_001 (Tipping hall No.3)</p>	 <p>Photo 120118_002 (Tipping hall No.2)</p>	 <p>Photo 120118_003 (Silt curtain near Tipping hall No.1)</p>
 <p>Photo 120118_004 (Generator near the water truck filling station No.2 at Section A6)</p>		



CEDD Contract No.: CV/2009/02  
Handling of Surplus Public Fill - Tseung Kwun O Fill Bank

Inspection Date : 27/1/12  
Time : 14:00  
Weather : Sunny / Fine / Cloudy / Overcast / Drizzle / Rain / Storm / Hazy  
Wind : Calm / Light / Breeze / Strong  
Temperature : 15°C  
Humidity : High / Moderate / Low

Inspected by	CEDD	Contractor / Sub-Contractor	ET
Signature:			
Name:	C K Jung M.C.S.M.	Jack Chen Kon Tam	Mark Lee Wai
Title	A/P3 cfs/PS	G.E. P.M.	E.T





Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
<b>Water Quality</b>				
Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.	✓			
The permanent drainage channels should have sediment basin, traps and baffles and maintain properly.	✓			
Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bay barriers shall be used to assist the diversion of polluted stormwater to the intercepting channels.	✓			
Manholes should be covered and sealed.	✓			
Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	✓			
A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.	✓			
A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront.	✓			
The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	✓			
The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	✓			
Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	✓			
Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	✓			
A wheel washing bay shall be provided at the site exit and wash-water shall have sand and silt settled out or removed before being discharged into storm drains.	✓			
The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcores to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	✓			
Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided. The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	✓			
Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas.	✓			
Oil interceptor shall be provided at work shop.	✓			
Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.	✓		Item 1	
The barges shall be in right size such that adequate clearance is maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.	✓			
All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.	✓			
Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	✓			
Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.	✓			
The work activities shall not cause any visible foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging facilities.	✓			
Existing silt curtain at the outward side of the basin near the Barging Handling Area throughout the period shall be repair, maintain and service when there is public fill intake by barges to the Fill Bank in accordance with PS Clause 1.68. The total length of the silt curtains shall not be less than 160m, and a gap of about 80m shall be left open for access of barges. The silt curtain shall be properly maintained such that it can also serve the function of refuse containment boom to confine floating refuse.	✓		Item 3	
A waste collection vessel shall be deployed to remove floating debris.	✓			

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	N/A	
<b>Landscape and Visual</b>					
	▪ The design of the fill bank and platform heights adopted should allow the fill bank to fit into the general topography of the surrounding land. Straight edged slopes should be avoided.	✓			
	▪ The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD.	✓			
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	▪ The barging point and the C&DMSF at the fill bank shall not be in operation from 07:00 pm to 08:00 am daily to avoid potential visual impact from glare.	✓			
<b>Other Environmental Factors</b>					
	▪ C&D waste sorted from mixed C&D material shall be removed from the temporary buffer storage area on a daily basis and transfer to SENT landfill for disposal.	✓			
	▪ Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	✓			
	▪ Any unused materials or those with remaining functional capacity should be recycled and stored properly.	✓			
	▪ All generators, fuel and oil storage are within bundle areas.	✓			
	▪ Oil leakage from machinery, vehicle and plant is prevented.	✓			
	▪ The Environmental Permit should be displaced conspicuously on site.	✓			
	▪ Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	✓			
	▪ To encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the workforce.	✓			



**Summary of the Weekly Site Inspection:**

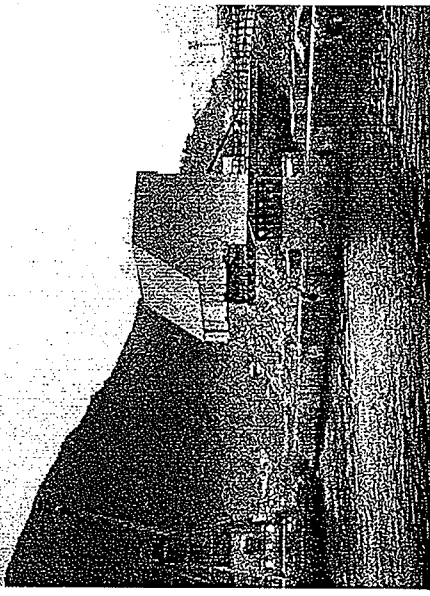
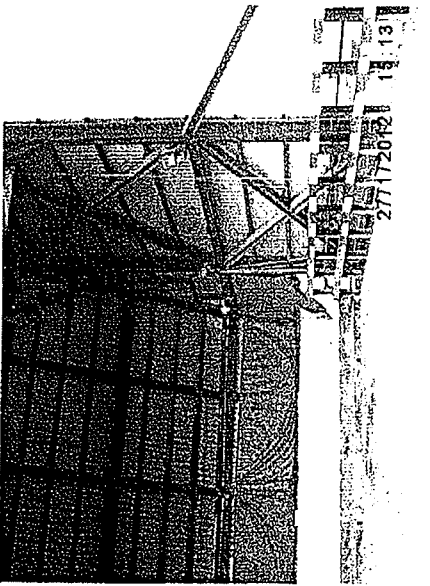
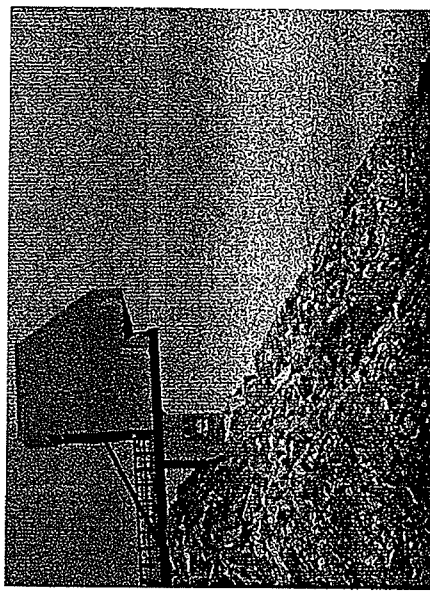
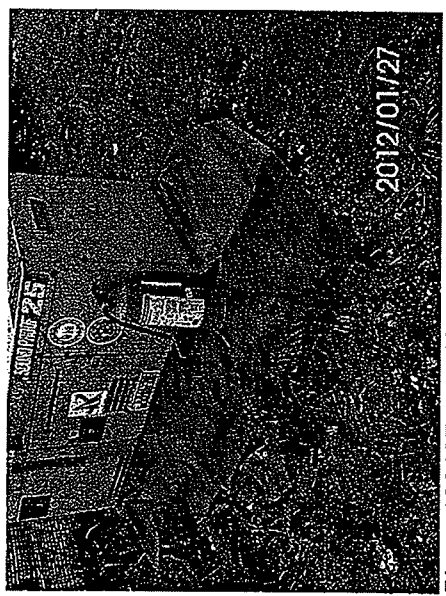
Item	Details of defective works or observations	Proposed Follow Up Action	Photo Ref.	Further Action Required (Yes/No)	Target Completion Date
1	Follow up action to item 2 on 02/11/11, item 2 on 09/11/11, item 2 on 16/11/11, item 2 on 25/11/11, item 2 on 30/11/11, item 2 on 07/12/11, item 2 on 14/12/11, item 2 on 21/12/11, item 1 on 28/12/11, item 1 on 04/01/12, item 1 on 11/01/12 and item 1 on 18/01/12, enclosure of tipping hall No.3 was still found damaged.	To repair the damaged part of tipping hall properly.	120127_001	Yes	01/02/12
2	Follow up action to item 4 on 14/12/11, item 3 on 21/12/11, item 2 on 28/12/11, item 2 on 04/01/12, item 2 on 11/01/12 and item 2 on 18/01/12, enclosure of tipping hall No.2 was found repaired.	--	120127_002	No	---
3	Follow up action to item 3 on 04/01/12 and item 3 on 11/01/12 and item 3 on 18/01/12, silt curtain near Tipping hall No.1 was noted damaged.	To repair the silt curtain as soon as possible.	120127_003	Yes	01/02/12
4	Follow up action to item 4 on 18/01/12, no oil leakage was noted from a drip tray for a generator near the water truck filling station No.2 at Section A6.	--	120127_004	No	---

Remark

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Name	Title	Signature	Date
Linda Law	Senior Environmental Officer		27 January 2012

**Photos**

 <p>Photo 120127_001 (Tipping hall No.3)</p>	 <p>Photo 120127_002 (Tipping hall No.2)</p>	 <p>Photo 120127_003 (Silt curtain near Tipping hall No.1)</p>
 <p>Photo 120127_004 (Generator near the water truck filling station No.2 at Section A6)</p>		



CEDD Contract No.: CV/2009/02  
Handling of Surplus Public Fill - Tseung Kwan O Fill Bank

Inspection Date : 31/1/12  
 Time : 14:45  
 Weather : Sunny / Fine / Cloudy / Overcast / Drizzle / Rain / Storm / Hazy  
 Wind : Calm / Light / Breeze / Strong  
 Temperature : 17°C  
 Humidity : High / Moderate / Low

Inspected by	CEDD	Contractor / Sub-Contractor	ET
Signature:		upon	Slak
Name:	C. K. Joo	Donnie Tong Lok Wah Fung	Slak Hei Wai
Title	A/OW/P3	Env. Officer S.S. Site Agent	E.T

Environmental Checklist		Implementation Stages*			Remark
		Yes	No	N/A	
<b>Fugitive Dust Emission</b>					
▪	Dust control / mitigation measures shall be provided to prevent dust nuisance.	✓			
▪	A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading / unloading and similar activities should be allowed.	✓			
▪	Water sprays shall be provided and used to dampen materials.	✓			
▪	Regular cleaning and watering the site shall be provided to minimize the fugitive dust emissions.	✓			
▪	All vehicles shall be restrict to a maximum speed of 10 km per hour.	✓			
▪	Any vehicle with open load carrying area used for moving materials which has the potential to create dust shall have properly fitting side and tail boards. Material having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin.	✓			
▪	The designated site main haul road shall be paved or regular watering.	✓			
▪	Frequent watering of work site shall be at least three times per day.	✓			
▪	Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site.	✓			
▪	Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.	✓			
▪	All plant and equipment should be well maintained e.g. without black smoke emission.		✓		Item 3
▪	Open burning should be prohibited.	✓			
▪	The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	✓			
▪	Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shot concrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	✓			
▪	When fill material is transfer by belt conveyor systems, the conveyors shall be enclosed on top and 2 sides.	✓			
▪	The belt scraper shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt.	✓			
▪	The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the material landing point is maintained at no more than 1m.	✓			
<b>Noise Impact</b>					
▪	The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	✓			
▪	Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	✓			
▪	Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	✓			
▪	Air compressors and hand held breakers should have noise labels.	✓			
▪	Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	✓			
▪	Noisy equipment and mobile plant shall always be site away from NSRs.	✓			

### Environmental Checklist

Water Quality	Remark	Implementation Stages*		
		Yes	No	N/A
Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.		✓		
The permanent drainage channels should have sediment basin, traps and baffles and maintain properly.		✓		
Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bay barriers shall be used to assist the diversion of polluted stormwater to the intercepting channels.		✓		
Manholes should be covered and sealed.		✓		
Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.		✓		
A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.		✓		
A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront.		✓		
The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.		✓		
The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.		✓		
Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.		✓		
Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.		✓		
A wheel washing bay shall be provided at the site exit and wash-water shall have sand and silt settled out or removed before being discharged into storm drains.		✓		
The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcore to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.		✓		
Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided. The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.		✓		
Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas.		✓		
Oil interceptor shall be provided at work shop.		✓		
Tipping hells enclosed with top and 3-side to prevent spillage of material into marine water.		✓		
The barges shall be in right size such that adequate clearance is maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.		✓		
All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.		✓		
Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.		✓		
Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.		✓		
The work activities shall not cause any visible foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging facilities.		✓		
Existing silt curtain at the outward side of the basin near the Barging Handling Area throughout the period shall be repair, maintain and service when there is public fill intake by barges to the Fill Bank in accordance with PS Clause 1.68. The total length of the silt curtains shall not be less than 160m, and a gap of about 80m shall be left open for access of barges. The silt curtain shall be properly maintained such that it can also serve the function of refuse containment boom to confine floating refuse.		✓		Item 2
A waste collection vessel shall be deployed to remove floating debris.		✓		

Environmental Checklist	Implementation Stages*		Remark
	Yes	No / N/A	
<b>Landscape and Visual</b>			
<ul style="list-style-type: none"> <li>▪ The design of the fill bank and platform heights adopted should allow the fill bank to fit into the general topography of the surrounding land. Straight edged slopes should be avoided.</li> <li>▪ The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD.</li> <li>▪ Surface of outer slopes of the fill bank shall preferably be hydroseeded or covered with geo-textile matting of appropriate colour (e.g. dark green / brown) once completed.</li> <li>▪ The barging point and the C&amp;DMSF at the fill bank shall not be in operation from 07:00 pm to 08:00 am daily to avoid potential visual impact from glare.</li> </ul>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>		
<b>Other Environmental Factors</b>			
<ul style="list-style-type: none"> <li>▪ C&amp;D waste sorted from mixed C&amp;D material shall be removed from the temporary buffer storage area on a daily basis and transfer to SENT landfill for disposal.</li> <li>▪ Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.</li> <li>▪ Any unused materials or those with remaining functional capacity should be recycled and stored properly.</li> <li>▪ All generators, fuel and oil storage are within bundle areas.</li> <li>▪ Oil leakage from machinery, vehicle and plant is prevented.</li> <li>▪ The Environmental Permit should be displaced conspicuously on site.</li> <li>▪ Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.</li> <li>▪ To encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the workforce.</li> </ul>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>		




**Summary of the Weekly Site Inspection:**

Item	Details of defective works or observations	Proposed Follow Up Action	Photo Ref.	Further Action Required (Yes/No)	Target Completion Date
1	Follow up action to item 2 on 02/11/11, item 2 on 09/11/11, item 2 on 16/11/11, item 2 on 25/11/11, item 2 on 30/11/11, item 2 on 07/12/11, item 2 on 14/12/11, item 2 on 21/12/11, item 1 on 28/12/11, item 1 on 04/01/12, item 1 on 11/01/12, item 1 on 18/01/12 and item 1 on 27/01/12, enclosure of tipping hall No.3 was repaired.		120131_001	No	—
2	Follow up action to item 3 on 04/01/12, item 3 on 11/01/12, item 3 on 18/01/12 and item 3 on 27/01/12, silt curtain near Tipping hall No.1 was noted damaged.	To repair the silt curtain as soon as possible.	120131_002	Yes	08/02/12
3	Black smoke was noted emitted from an excavator at Dry public fill dumping zone at A4.	To stop to use the defect excavator until repaired properly.	120131_003	Yes	08/02/12

Remark

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Name	Title	Signature	Date
Linda Law	Senior Environmental Officer		31 January 2012

Photos



Photo 120131\_001 (Tipping hall No.3)

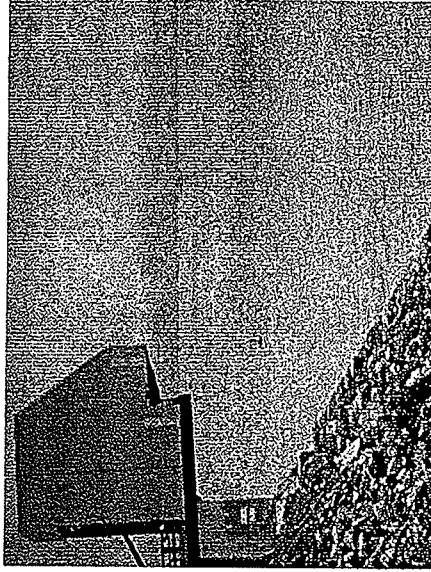


Photo 120131\_002 (Silt curtain near Tipping hall No.1)

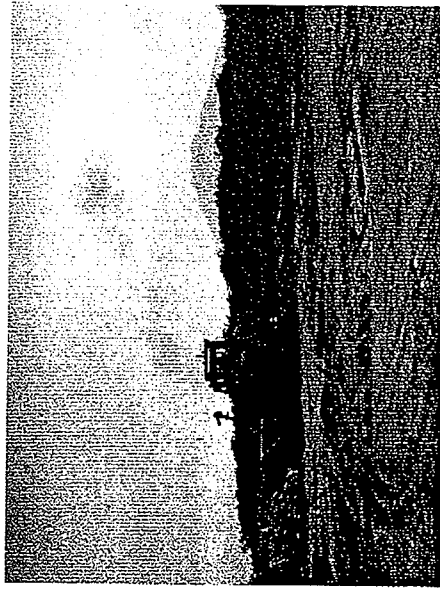


Photo 120131\_003 (Dry public fill dumping zone at A4)



## **Appendix J**

### **Implementation Schedule of Mitigation Measures**





Environmental Protection Measures		Location	Implementation Status		
			Implemented	Partially implemented	Not implemented
<b>Water Quality</b>					
<ul style="list-style-type: none"> <li>▪ Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.</li> <li>▪ Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.</li> <li>▪ The existing / realigned intercepting channels and the sand / silt removal facilities shall be used and maintained regularly.</li> <li>▪ A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.</li> <li>▪ A buffer distance of at least 20m shall be maintained between the boundary of the C&amp;DMSF and the seafront.</li> <li>▪ The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.</li> <li>▪ The material shall be properly covered to prevent washed away especially before rainstorm.</li> <li>▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.</li> <li>▪ A wheel washing bay shall be provided at the site exit and wash-water shall have sand and silt settled out or removed before being discharged into storm drains.</li> <li>▪ Obtain Discharge License</li> <li>▪ Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.</li> <li>▪ The work activities shall not cause any visible foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging facilities.</li> <li>▪ A waste collection vessel shall be deployed to remove floating debris.</li> </ul>	All areas	√			
	All areas	√			
	All areas	√			
	Along the seafront	√			
	C&DMSFS				√
	All areas	√			
	All areas	√			
	Temporary Slopes	√			
	Wheel Washing facility	√			
	Site Office	√			
	Barge Handling Area (BHA)	√			
	Barge Handling Area (BHA)	√			
	Barge Handling Area (BHA)	√			
<b>Landscape and Visual</b>					
<ul style="list-style-type: none"> <li>• Construction of lighting to avoid spillage and glare</li> <li>• Hydro-seeding</li> <li>• Hoarding erection</li> <li>• Damage to surrounding area avoided</li> </ul>	All areas	√			
	Completed slopes	√			
	Site boundary	√			
	All areas	√			
<b>Other Environmental Factors</b>					
<ul style="list-style-type: none"> <li>• C&amp;D waste sorted from mixed C&amp;D material shall be transfer to SENT landfill for disposal.</li> <li>• Plan and stock construction materials carefully to minimise generation of waste.</li> <li>• Any unused materials or those with remaining functional capacity should be recycled.</li> <li>• All generators, fuel and oil storage are within bunded areas.</li> <li>• Oil leakage from machinery, vehicle and plant is prevented.</li> <li>• Bund chemical storage area to 110% capacity.</li> <li>• Prevent disposal of hazardous materials to air, soil and water body.</li> <li>• Provide rubbish skips at all work areas</li> <li>• Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.</li> </ul>	All areas	√			
	All areas	√			
	All areas	√			
	All areas	√			
	All areas	√		√	
	All areas	√			
	All areas	√			
	All areas	√			
	All areas	√		√	

## **Appendix K**

### **Site General Layout plan**





## **Appendix L**

### **Monitoring Schedule for the Coming Month**



**Contract No. CV/2009/02**  
**Handing of Surplus Public Fill**

**Tseung Kwan O Area137**

**Time Schedule for Impact Water Quality Monitoring (WQM), Impact Air Monitoring (1-hr TSP & 24-hr TSP), Weekly Site Inspection (Weekly SI) and Impact Noise Monitoring (NM)**

**February 2012**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1 <u>Weekly SI</u> <u>1-hr TSP x 2</u> <u>WQM</u> Mid-flood (11:00-12:00) Mid-ebb (18:00-19:00)	2	3 <u>1-hr TSP</u> <u>WQM</u> Mid-flood (09:00-10:00) Mid-ebb (19:00-19:00)	4
5	6 <u>1-hr &amp; 24-hr TSP</u> <u>WQM</u> Mid-ebb (11:00-12:00) Mid-flood (15:30-16:30)	7	8 <u>Weekly SI</u> <u>1-hr TSP</u> <u>NM</u> <u>WQM</u> Mid-ebb (12:00-13:00) Mid-flood (17:00-18:00)	9	10 <u>1-hr TSP</u> <u>WQM</u> Mid-flood (08:30-09:30) Mid-ebb (14:00-15:00)	11
12 <u>24-h TSP</u>	13 <u>1-hr TSP</u> <u>WQM</u> Mid-flood (10:00-11:00) Mid-ebb (16:00-17:00)	14	15 <u>Weekly SI</u> <u>1-hr TSP</u> <u>WQM</u> Mid-flood (11:30-12:30) Mid-ebb (17:00-18:00)	16	17 <u>1-hr TSP</u> <u>WQM</u> Mid-ebb (09:00-10:00) Mid-flood (13:30-14:30)	18 <u>24-hr TSP</u>
19	20 <u>1-hr TSP x 2</u> <u>WQM</u> Mid-ebb (11:00-12:00) Mid-flood (16:00-17:00)	21	22 <u>Weekly SI</u> <u>1-hr TSP</u> <u>WQM</u> Mid-ebb (12:30-13:30) Mid-flood (17:30-18:30)	23	24 <u>1-hr &amp; 24-hr TSP</u> <u>WQM</u> Mid-flood (08:00-09:00) Mid-ebb (13:30-14:30)	25
26	27 <u>1-hr TSP</u> <u>WQM</u> Mid-flood (09:00-10:00) Mid-ebb (15:00-16:00)	28	29 <u>Weekly SI</u> <u>1-hr TSP</u> <u>WQM</u> Mid-flood (09:30-10:30) Mid-ebb (16:00-17:00)			



## **Appendix M**

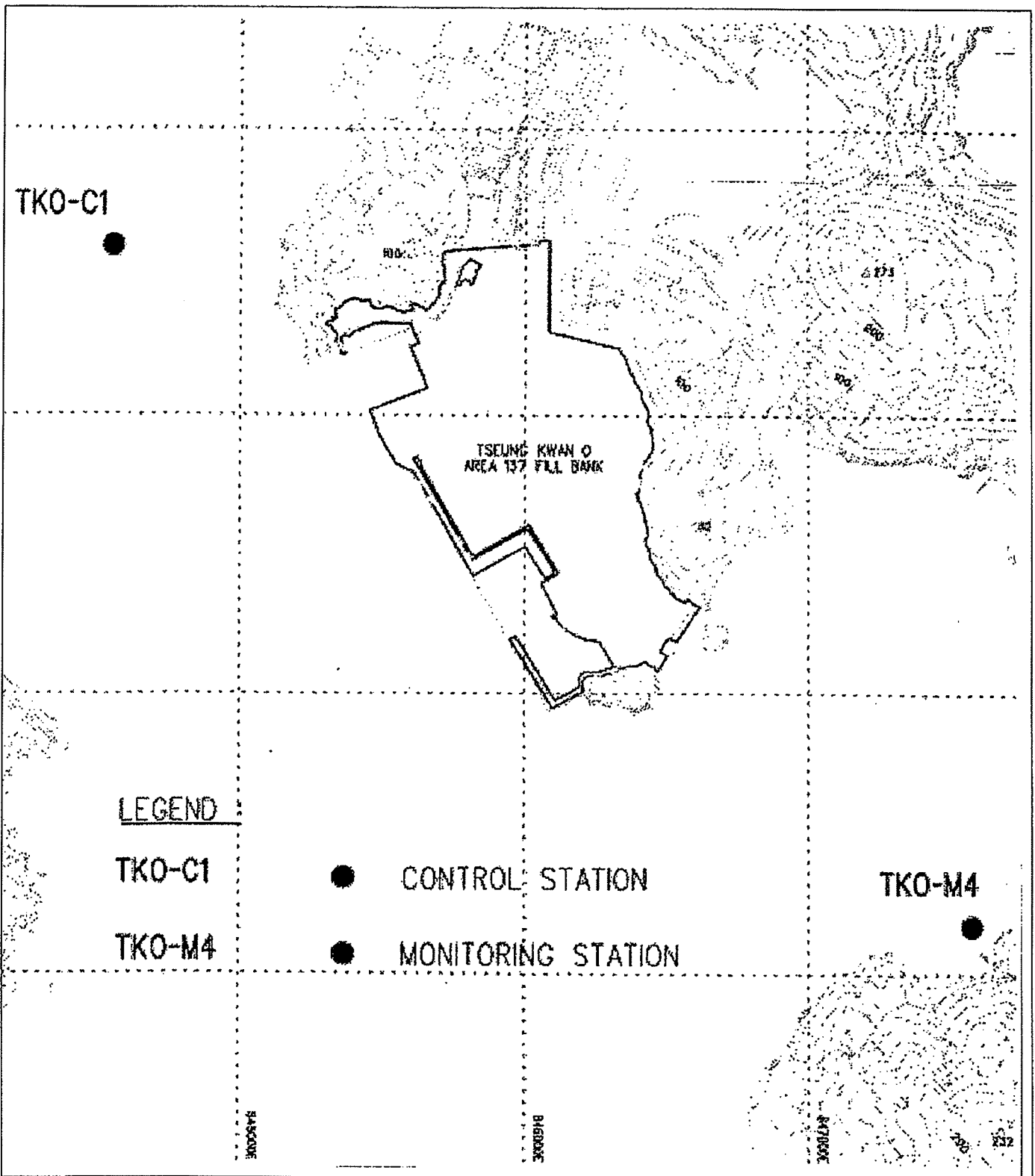
### **Complaint Log**

## Complaint Logs

Log Ref.	Location	Received Date	Details of Complaint	Investigation / Mitigation Action	Status
001	Working Area of the Fill Bank	25 August 2010	Three complaints received on 06 and 08 July 2010 was forwarded by the EPD on 25 August 2010 (Ref No.: (3) in EP3/N08/RE/00013438-10) from a citizen against dust emission at working area of the Fill Bank which caused by no water spray. The complainant complained that the dust generated caused an environmental nuisance.	<p>In response to the complaint, EPD had taken site investigations on 12 July 2010. During the site investigation, some improvements in the situation were noted by EPD and EPD reminded the Contractor to implement appropriate dust control measures as suggested in the EIA report to minimize dust impact to the environment, such as increasing the frequency of watering and spraying the site area especially during dry weather.</p> <p>Besides, a complaint investigation report of this event have prepared by ET. From the investigation report, it noted that water spraying in the Fill Bank was not sufficient during the weekly site inspection on 07 July 2010 but there was no exceedance in air quality on 07 and 08 July 2010. Nevertheless, in view of our observation on site, the Contractor was still urged to increase the frequency of watering in the Project site especially during dry weather condition in order to enhance the air quality of the Project site. During the subsequently weekly site inspection on 14 July 2010, no more dust emission was observed in the Project site. It believed that the Contractor had provided as much as dust control measures to mitigate the problem and the air quality was further improved.</p>	Closed
002	Working Area of the Fill Bank	20 September 2011	Two complaints received on 24 and 29 August 2011 was forwarded by the EPD on 20 September 2011 (Ref No.: (2) in EP3/N08/RE/00017553-11) from public against dust emission at TKO137 Fill Bank. The complainant complained that the dust generated caused an environmental nuisance.	<p>Refer the EPD site investigation, no excessive emission of dust was revealed from the TKO137 Fill Bank. However, the Contractor was reminded to take more effort on the dust depression measures in the site area.</p> <p>Besides, a complaint Investigation report of this event have prepared by ET. From the investigation report, it noted that no fugitive dust emission was observed at TKO137 Fill Bank during the weekly site inspection on 24 and 31 August 2011 and no air quality exceedance was recorded during the dust monitoring period from 24 to 31 August 2011. Generally, the Contractor has implemented dust control measures to reduce dust impact to the environment but some improvement should be carried out. The Contractor should take more effort on the frequency of watering on site especially during dry weather.</p>	Closed



## Figures

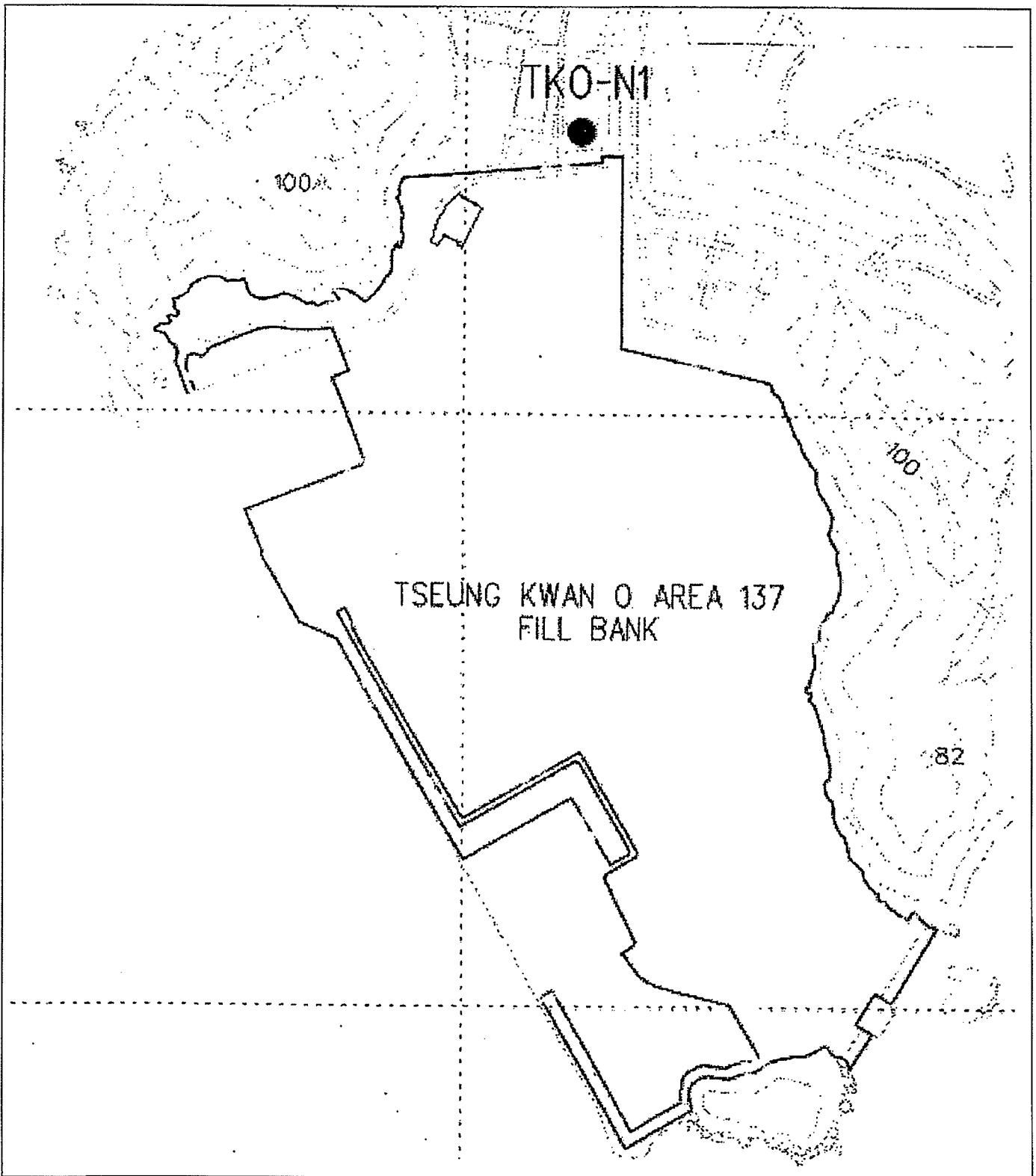


Contract No. CV/2009/02  
 Handling of Surplus Public Fill

Figure 1  
 Locations of Water Quality Monitoring Stations –  
 Tseung Kwan O Area 137 Fill Bank



東業德勤測試顧問有限公司  
 ETS-TESTCONSULT LIMITED



Contract No. CV/2009/02  
 Handling of Surplus Public Fill

Figure 2  
 Locations of Noise Monitoring Station –  
 Tseung Kwan O Area 137 Fill Bank



Contract No.  
CV/2009/02  
Handling of  
Surplus Public  
Fill

Title:  
Locations of Air  
Quality  
Monitoring  
Stations –  
Tseung Kwan O  
Area 137 Fill  
Bank

ETS-Testconsult  
Ltd

Figure 3a

